

AMERICAN

# CINEMATOGRAPHER

The Motion Picture CAMERA Magazine

## THIS ISSUE

*Arnold Elected President*

*Infra Red in the Air*

*New Light Camera Crane*

*A.S.C. Golf Tournament*

*Color Control*

*... and Other Features*

MAY 1924

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by the

American Society of Cinematographers



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# AMERICAN CINEMATOGRAPHER

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of motion picture photography

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Volume XV

MAY, 1934

Number 1



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• New things and methods found in the Hollywood Studios will be reported with several articles by members of the American Society of Cinematographers touching upon the present day technique of motion picture making



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# *What have* **HIGHLIGHTS and CONTRASTS** *to do with lamp-making?*



NO CONTRAST



GOOD CONTRASTS



EXTREME CONTRASTS

**HIGHLIGHTS** and contrasts are important fundamentals of cinematography.

Every cinematographer knows the principles of producing them. He knows that highlights are reflected images of the light source; that the location of a highlight depends upon the relative positions of camera, subject and source; that the size of a highlight is governed by the size of the light source, its distance and by the character of the surface it strikes.

He knows, too, that by the creation of contrasts with highlights, shadows and general light, he can not only give form and texture, but can control expression; and practical training has made him familiar with

infinite refinements of these principles.

General Electric's engineers and research men have had to learn these facts and study them, so that they might be of greater service to the motion picture industry . . . in developing new lamps and in guiding you to greater use of the many Edison MAZDA lamps already developed.

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THE AMERICAN SOCIETY OF CINEMATOGRAPHERS was founded in 1918 for the purpose of bringing into closer confederation and cooperation all those leaders in the cinematographic art and science whose aim is and ever will be to strive for pre-eminence in artistic perfection and technical mastery of this art and science. Its purpose is to further the artistic and scientific advancement of the cinema and its allied crafts through unceasing research and experimentation as well as through bringing the artists and the scientists of cinematography into more intimate fellowship. To this end its membership is composed of the outstanding cinematographers of the world, with Associate and Honorary memberships bestowed upon those who, though not active cinematographers, are engaged none the less in kindred pursuits, and who have, by their achievements, contributed outstandingly to the progress of cinematography as an Art or as a Science. To further these lofty aims, and to fittingly chronicle the progress of cinematography, the Society's publication, *The American Cinematographer*, is dedicated

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# A. S. C. Golf Tournament Huge Success

**T**he First Annual A.S.C. Golf Tournament was played at the Hollywood Country Club, Sunday, April 8. Over two hundred players took part, and the affair was pronounced the most successful cameramen's golf tourney ever held. Cecil Myers, with a 77, carried off the Low Gross honors, closely followed by Al Labovitz, Bert Six, and John Fulton, while Willard Vogel led the rear-guard for the dubious High Gross honors with a score of 192. Between these extremes were over a hundred prize and trophy-winners, grouped in six flights, according to their golfing ability. The prizes were awarded at a special Open Meeting of the Society, held the following night, at which time the incoming officers were formally installed. A list of the winners, their prizes and the donors follows. The American Society of Cinematographers herewith extends to these generous friends its sincere appreciation for their generosity in donating these trophies and prizes.

## SPECIAL TROPHIES

CECIL MYERS, Low Gross Trophy, donated by Max Factor Make-up Studios  
BERT SIX, 2d Low Gross Trophy, donated by Fox Studio  
JOHN FULTON, 3d Low Gross Trophy, donated by J. J. Gair  
AL LEBOWITZ, 4th Low Gross Trophy, donated by W. S. Van Dyke  
EDDIE COHEN, Special A.S.C. Prize, a Diamond Ring, donated by Mae West

## FIRST FLIGHT

BERT GLENNON, Television Clock, donated by William LeBaron  
ROY JOHNSON, Weston Photometer, donated by Edward G. Robinson  
LEONARD SMITH, Set Matched Kroydos Irons, donated by D. H. Briggs  
ERNEST LASZLO, Set Matched Hagen Woods, donated by B. P. Schulberg  
SHERMAN CLARK, Set Matched Wilson Irons, donated by Norma Shearer  
GEORGE ROBINSON, Leather Hand-trunk, donated by Smith & Aller  
REGGIE LANNING, Atwater-Kent All-wave Radio,  
donated by Hollis F. Moyse

GORDON JENNINGS, Leather Golf Bag, donated by C. D. White  
ROBERT PITTAOK, 8mm Camera, Projector and Screen,  
donated by Eastman Kodak Co.  
GAETANO GAUDIO, Leather Kit Bag, donated by Dick Powell  
GUY M. BENNETT, Set Matched Wilson Irons, donated by Harry Beaumont  
ELLSWORTH FREDRICKS, Smoker's Set, donated by Bill Ring

## SECOND FLIGHT

DAN FAPP, Set Matched Wilson Irons, donated by J. E. Brulairour Co.  
WARREN LYNCH, Set Matched Irons, donated by Larry Weingarten  
FRANK CAUDIO, Cocktail Shaker, donated by Norman Tausig  
RICHARD TOWERS, Patterson All-wave Radio,  
donated by Warner Studio Sound Department  
WESLEY ANDERSON, Leather Golf Bag, donated by Ruby Keeler  
KARL STRUSS, Film 16mm Camera, donated by Bell & Howell Co.  
AL SEIGLER, Leather Kit Bag, donated by Consolidated Laboratory  
ELWOOD BREDELL, Set Matched Bristol Clubs, donated by Sam Wood,  
also Gold Wrist Watch, for closest to fifth hole,  
donated by W. J. German

WILLIAM WHITLEY, Television Clock, donated by Joe Nolan  
AL GREENE, Case Gin, donated by Ed Kennedy  
JACK SMITH, Merchandise Order, donated by Paul Sloane  
HAL ROSSON, Poker Set, donated by David Selanick

## THIRD FLIGHT

JAMES MANNATT, Hand Trunk, donated by Guy Lombardo and his Band  
JAMES WONG HOWE, Set Hagen Matched Irons, donated by Bing Crosby  
BENJAMIN KLINE, Mitchell Variable Diffuser,  
donated by Mitchell Camera Co.  
HARRY MARBLE, Failla All-wave Radio, donated by Cecil B. DeMille  
BEN COHAN, Set Wilson Matched Woods, donated by Jack Conway  
RAY RIES, Set Matched Woods, donated by Bernard Hyman  
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NORBERT BRODINE, Merchandise Order, donated by William A. Senter



Cecil Myers,  
First Low Gross, 77



Bert Six,  
Second Low Gross, 77



John Fulton,  
Third Low, 78.



E. Cohen, winner of  
Mae West diamond  
ring, given as a spe-  
cial prize at installa-  
tion of officers meet-  
ing with all players  
available.

We did not secure a  
prize for Fourth  
Low which was won  
by Al Labovitz



# John Arnold Heads A. S. C. For Fourth Term

**A**T THE Annual Election of Officers of the American Society of Cinematographers, John Arnold was unanimously re-elected President for his fourth successive term of office. Victor Milner was re-elected as First Vice-President, John W. Boyle was elected Second Vice-President, Elmer C. Dyer was re-elected Third Vice-President, George Schneideman was re-elected Treasurer (also for his fourth year) and Frank B. Good was elected Secretary. In accordance with a recent change in the Society's Constitution and By-Laws, the terms of office of members of the Board of Governors has been extended from one year to three, with a group of five being replaced annually. At the recent election, five Governors resigned, being replaced by Daniel B. Clark, Arthur Edson, George Folsey, Frank B. Good and Vernon L. Walker. The Board of Governors for the coming year therefore includes President Arnold, Daniel B. Clark, Elmer C. Dyer, Arthur Edson, George Folsey, Alfred Gilks, Frank B. Good, Fred W. Jackman, Ray June, Charles B. Lang, Jr., Victor Milner, George Schneideman, James C. Van Trees, Sr., and Vernon L. Walker.

Under President Arnold's able leadership, the American Society of Cinematographers has advanced to a stronger position than ever before. The Society has weathered what is probably the most chaotic year in the history of the Motion Picture Industry—a year that has seen a nationwide bank-holiday, a world economic depression which has shaken every industry, widespread labor strife, including an abortive strike of film-technicians, and the sweeping changes brought about by the writing and enforcement of the NRA Code for the Industry. Through it all, the A. S. C. has maintained its progress, despite upheavals which have riven the industry and shattered many of the industry's leadership. The Society has opened its membership to Operative and Assistant Cinematographers and Still Photographers, with the result that today virtually



John Arnold,  
President, A. S. C.

every cinematographer of recognized standing in the industry is a member of the American Society of Cinematographers. Moved by circumstances beyond the control of individuals, the Society has assumed the responsibility of overseeing the economic welfare of Cinematographers. The first step in this direction was the conclusion of a long-term contract between the Society and the Producers, guaranteeing certain fair and equitable conditions to be observed between the photographers and their employers, in many instances, the conditions specified have been important improvements over anything previously existing. Moreover, an entirely new spirit of cooperation has been manifested by both parties.

The second step in the Society's program for the benefit of its members is the creation of the ASC-Agency, a subsidiary of the American Society of Cinematographers designed to fill the long-felt need for a complete personal-representation or management service for Cinematographers. This organization, under the direction of Mr. Allen M. Watt, the Executive Manager of the Society, is organized to supply a complete business and personal management service to such members of the A. S. C. as may desire it. The professional management phases of the Agency's activities include, aside from the negotiation of contracts for employment, the handling of publicity and exploitation, legal advice, etc. The personal management phases include legal advice, all forms of tax-accounting, insurance and investment advice, personal business administra-



Photo by Clifton L. Kling. A.S.C.

## Utility Features New Light Crane

by

Arthur Edison, A.S.C.

DEVELOPMENTS in both camera equipment and camera technique within the past few years have made imperative the parallel development of an entirely new type of camera-supporting devices, for both static and mobile shots. The economic exigencies of modern production, moreover, have clearly set forth the added requirement that, with the exception of the extremely large cranes or booms needed for certain spectacular scenes on large sets, a single device should be adaptable for use in static, traveling and routine crane shots. Various studios, as well as independent manufacturers, have within the past eighteen months developed devices conceived to meet these demands, with the result that in the majority of the major studios, tripods and "rolling-tripods" are giving way to the new type camera carriages.

The most recent of these new devices is a light crane or camera carriage designed and built at the Warner Bros. Studio, and which I am now using very successfully on my current production, *"Hey Sailor!"* It is of the crane type, sufficiently light and compact to be used on any set or location, yet giving a range of adjustment more than adequate to meet the requirements of all but the most spectacular scenes. While essentially not unlike certain similar devices already in extensive use, it includes many refinements of design and operation which, in my opinion, place it well in the forefront of modern development.

The new crane was designed by Albert Tondreau, Head of the Warner Bros. Studio Machine-shop, and constructed entirely in the Studio's shops, under the direct supervision of the designer, and Frank Murphy, Head of the Warner Bros. Electrical Department, of which the shop is a branch. Charles Grouner, Camera Executive, and several of the outstanding Cinematographers on the Studio's staff served in an advisory capacity in perfecting the design. Such co-operation afforded very nearly ideal circumstances for such a development, uniting as it did the best of engineering, constructional and operational experience.

The new camera carriage is of the crane type, with the camera supported at the end of a short crane-arm which elevates it to any desired height. Horizontal adjustment is secured through a friction type pin-and-tilt head upon which the camera and blimp are mounted, and by the steerable wheeled undercarriage of the crane's chassis.

This chassis is of the conventional type, though with rather more running-board or platform space for the accommodation of the camera crew, etc., than is customary. The chassis is mounted on four small wheels, fitted with solid-rubber tires. All four wheels are steerable, being interconnected and controlled from the tow-bar. For normal use, the two rear wheels may be locked, by means of a lever below the left running-board, which slides the steering link interconnecting the front and rear wheels into a neutral, or unoperative, position, but leaving the front wheels steerable. A larger fifth wheel is placed at the front of the chassis, mounted so that it may be lowered, raising the normal front wheels from the floor. When this fifth wheel is used, the turning radius of the carriage is shortened materially, to the extent that the carriage can be pivoted through a complete circle with the rear wheels the axis. Steering with this fifth wheel is accomplished by attaching the tow-bar to a separate steering and towing stub, the tow-bar may be moved from one connection to the other in a few seconds, by loosening a single clamp. For static shots, four screw-jacks placed by the four wheels, will lift the crane entirely off from the wheels, "tying it down" very effectively.

The crane-arm, which is non-rotating, is placed conventionally, with its fulcrum somewhat forward of the vehicle's center. It is raised or lowered by operating a large hand-

(Continued on Page 22)

# Color Control for Color Film

by

Henri Coufon, B. A.

IN a previous article the writer discussed newly designed color science equipment and its application to black and white films in looking toward improved tonal balance.

Regarding the production of films in color, it seems certain that this year will bring an entirely new concept of color photography and on every hand we now see producers acknowledging color as the next logical step in the evolution of the motion picture.

The advent of men like Robert Edmond Jones and Russell Patterson portends a greatly increased interest in the artistic use of color by the industry. To quote Mr. Patterson: "Today is color conscious."

It is only a question of time until the majority of pictures will be shown in color—production of films in color has been restricted in the past for several reasons with two main indictments.

Theoretically, many producers have held that audiences do not want color, feeling that the accustomed black and gray rendition affords greater scope for each member of the audience to interpret the dramatic mood and tonal effect according to his or her individual taste and reaction.

Secondly, it has been found that color in films has been more trying and fatiguing to the eyes than the shadow gray—this was and is perfectly true but only because the colorings of all motion pictures which give this trying effect are out of balance.

When we consider that to a large extent, regardless of the artistic merit of a picture, its worth as a production and a precedent is measured almost entirely by "box office," and when we look back over the majority of colored films and see what the fan received for his money—we cannot altogether blame the producer for not wanting to convert his productions into color.

However, people do want films in color and would welcome a production using color in a pleasing manner—where producers often fear of making a picture too "arty" and devoid of much appeal to that famous twelve year old mind to which we are told so many scenarios are sealed, they should realize that although action and plot must oftimes be held within limits to appeal to, and be understood by the vast majority of people—color has a universal appeal and its vocabulary of expression is understood by everyone. Along with music, color holds fascination and interest for everyone and each interprets color according to his or her own psychic reaction.

With colored films there has been a tendency to overdo with patches of unrelated colors in order to make a visual flash—this is neither art or good judgment and will not prevail when the correct use of color is understood.

There is no reason why chromatic films may not be as effective and artistically correct as the achromatic, black and white picture—judicious use of color intensities will enable producers to avoid previous misconceptions of color

## HIGHLIGHTS

Improved color-film processes fore-shadow increased use of color.

Art-directors should be trained color-technicians.

Wide range of colors can be used without irritating effects if color-intensities are properly blended.

600 colors mixed to known intensities . . . by scientific intensifying and reducing approximately 15,000 colors can be secured.

Scientific control of coloring in sets and costumes can create important psychological response without restriction of colors.

Costume colors can be blended to suit personality and role of players.

photography and bring forth pictures in which color will be the artistically valuable ally and not, as previously, the handicap.

Of importance, technically, is the knowledge that all colors and color tints are produced by a separation of light vibration forces or by handclapping one light vibration force with another—visual and photographic art in color needs a recognized scale the same as music.

Herein, the color picture has the opportunity not only to attain improved chromatic rendering but to point the way for the most intelligent concept of the use of color for other arts to follow.

By correctly relating color to mood, action and plot, and by using less color, vast improvements may be accomplished. Color, in itself, has vast potential advantages for the screen and through its proper use can be as dynamic and effective in conveying the message of the picture as sound or music.

The situation calls for trained color technicians with ability to not only understand the control and determination of color intensities but with appreciation of all the important psychological factors involving the correct use of color.

By bringing into use new, copyrighted color science equipment mentioned last month, for establishing color radiation terminating and controlling color intensities, the writer plans factors for the individual and a method of scientifically determining and controlling color intensities, the writer plans not only to aid in balancing color in settings and backgrounds but to also work out for the individual player, the correct color intensities best suited to emphasize her personality while at the same time indicating the colors most appropriate psychologically to the player and the role.

To those familiar with the construction of the human eye it becomes evident that to achieve balance, the deflected light vibrations from objects must be in vibratory balance if the effect is to be pleasing and harmonious to the eye. By establishing scientifically, the correct color intensities for the individual player, for costumes and for settings, the whole ensemble can be brought into visual balance—no one color harsh or displeasing to the eye.

In the case of musical pictures, balanced color combinations for chorus ensembles can be determined. All manner



This picture was transmitted from standard western picture film. It is a 60-line picture received via cathode ray receiver over television station WXXG, Purdue University, Lafayette, Indiana.

THE purpose of this article is to chronicle the present status of television with due regard to its problems as well as its successes.

Early in December, 1933, there were 27 experimental vision (television) broadcasting stations in the United States as licensed by the Federal Radio Commission.

Experimental licenses have been granted these stations with definite restrictions. The stations must be engaged in fundamental research and show evidence that they are contributing substantially towards its progress. Each station must maintain complete records of its operation concerning hours, frequencies, power and types of emissions. Under no circumstances will advertising or any form of commercial broadcasting be permitted over these experimental vision stations.

No experimental frequency is assigned exclusively to any station. Whenever interference is experienced the licenses are required to arrange for a satisfactory allotment of time.

To date, no commercial vision (television) broadcasting station has been granted a license by the Federal Radio Commission. Before granting any commercial licenses the Commission feels that certain standards must be adopted by the visual broadcasting industry. It is believed that the very high frequencies make it possible to transmit a better quality picture, therefore equipment to broadcast the future commercial television program will probably transmit on a high frequency band at a rate of 24 pictures per second with 300 line scanning.

## Television

These requirements will raise a question to the reader. What is the present experimental equipment doing? The mechanical or scanning disc transmitter on an average has been scanning 40 to 80 lines at speeds of 20 to 15 pictures per second. The electrical or cathode transmitter on an average has been scanning 120 to 180 lines at speeds of 24 to 20 pictures per second. The size of the picture received at the present time varies from 3½ to 5 inches or 5 to 7 inches. The future size will probably be a picture 10 by 12 inches. It is now possible to enlarge up to a picture of 4 by 5 feet, but it is highly probable that the vision on a receiving set will stay in the less than one foot class on account of the desirable size of housing unit or cabinet.

Receiving sets are being made with both sight and sound in the same cabinet—the vision or sight at the top and the loud speaker or sound at the bottom. The operator tunes in on one dial for the vision and on another dial for the sound. Recent patents have made it possible to receive both vision and sound impulses for the set over the same aerial or antenna. If the operator uses his old radio set to obtain the sound part of the program and buys a new separate vision set to obtain the picture, then it would be necessary to employ two aeriels or antennae, one for sound and one for vision.

In order to more clearly show the progress made in television, and also explain some of the existing limitations, a brief discussion of fundamental television principles will be necessary.

Television transmission and reception involves the following fundamental processes: (1) The breaking up of the field of view into an orderly arrangement of picture elements, (2) The conversion of the light impulses thus obtained into electric current, (3) Their transmission through space, (4) The pickup by a receiver and restoration to electric current, (5) The reversion of electric current to light impulses, (6) The rearrangement of picture elements to correctly form original view.

Science has not yet been able to transmit a picture in its entirety as a single electrical impulse. It is therefore necessary that the picture or subject for transmission be broken down into a succession of very small areas or picture elements.

The smaller the areas taken the more pleasing are the results. This may be likened to printing half tones for paper illustrations, the more dots per given area the better the picture.

Scanning is the term applied to the process of breaking up a picture into a grooved succession of picture elements.

# Its Progress and Possibilities

by

**R. V. Newcomb**Technical Engineer  
Telemon Picture Productions

Scanning is accomplished mechanically by means of a rotating disc with a series of holes cut in spiral arrangement, or accomplished electrically by means of a cathode-ray tube where the picture is scanned by releasing electrons from a hot cathode through a tiny pinhole in the anode.

In case of the scanning disc, a 40 line picture would mean that the disc would have 40 holes in it, each hole scanning one line or row of picture elements horizontally across the field. An 80 line picture would require a disc with 80 holes. Each rotation of the disc would scan one picture.

The speed of the scanning disc must be sufficiently rapid to secure the effect of smooth motion without flicker. This would mean not less than 15 complete pictures per second and preferably not less than 20 pictures per second.

To scan at the rate of 20 pictures per second would mean a disc speed of 1200 revolutions per second. Light of considerable intensity is necessary to penetrate sufficiently through such a small hole, moving at such a great speed. Therefore we find some limitations in the matter of speed for the mechanical method of scanning.

In research work with a cathode-ray tube it was found that the tiny beam of light could be bent or deflected by a magnetic force. Since a stream of electrons has very little inertia if considered from the standpoint of a material body, this beam of light can be moved or bent at a high rate of speed by changing the magnetic controlling forces. Speed, therefore, in this case is not a limiting factor. Cathode-ray limitations concern sensitivity of the fluorescent material and length of life of the tube.

Having broken down the picture or field of view into an orderly arrangement of light impulses, it is next necessary to change these light impulses into electric current variations. For instance a picture element of dark hue would produce a weaker signal than one of a light hue. This change from light impulse to current is accomplished by a light sensitive device or photo electric cell.

By directing the light reflected through the holes of a scanning disc, or electrically controlled beam in case of cathode-ray tube, to the light sensitive device a progressive electrical intensity record is secured of the subject matter to be transmitted.

The photo electric cell is to television what the microphone is to sound.

The electric current thus generated is called a picture signal. These picture signals are then amplified to a sufficient magnitude for transmitting through space. Proper synchronization of scanning arrangement is a most important matter in television transmitting.

The receiver, properly adjusted to frequency of transmission then picks up the picture signal through the usual amplifier and detector circuits.

The neon glow tube or a cathode-ray tube are then used to revert the picture signal back to original light impulses. The neon glow tube is usually a red light and cathode-ray tube a green light. A neon glow tube giving a black and white picture which may prove to be quite a step in picture brilliancy is now being experimented with.

The receiving scanning disc or magnetization of receiving cathode-ray tube must be operated in absolute synchrony with the transmitting scanning disc or magnetization of transmitting cathode-ray tube.

The eye then sees through the visor as a complete image, the series of varying light impulses received as a picture signal.

There are two methods for televising a subject or view, 1) by picking up through a camera lens the actual scene or group of persons, this is known as the DIRECT PICK-UP. (2) The televising of motion picture film which may be called a FILM TRANSCRIPTION.

Both methods have their important place in the future of television broadcasting.

Entertainment value, rather than mere novelty, will be required of television programs if the public are to become interested. Good programs are expensive, therefore it would appear that the advertiser or sponsor must, in some way or another, help get things started. We must remember, however, that the Federal Radio Commission will not grant commercial licenses to any broadcasting unit until television research engineers perfect equipment that will assure the public a good clear picture.

Any person not acquainted with television research who today expects to see a perfect picture upon the visor is quite likely to be disappointed. Reproduction of small detail is not perfect and distortion is by no means a rare occurrence.

However, anyone who has been following television research for some time, feels most happy over the outlook. To them the pictures now received on the visor look great.

There is healthy enthusiasm among research personnel. They are working hard to clear up what they call minor matters. Legal battles over patent structures are fast becoming adjusted and licenses are being granted manufacturers for the construction of both transmitters and receivers.

Things are beginning to "look up."



infra-red in the air. The illuminated surface of the airplane will be rendered in the same tone regardless of the filter used

## Using Infra-Red In The Air

by

Elmer G. Dyer, A.S.C.

**F**OR many years it has been my ambition to make filiated night-effect shots in the air. The pictorial and dramatic possibilities of aerial night scenes are unlimited, as anyone who has flown at night will realize. Unfortunately, however, two obstacles lay in my path: existing panchromatic emulsions, excellent though they were, would not give me the exact effects I visualized. Secondly, the majority of producers and directors with whom I worked could not muster sufficient faith in such scenes to justify the experiment. For a long time it seemed as though my hopes could not be fulfilled.

With the development of infra-red sensitive emulsions for still photography, I took new hope, even though such emulsions were coated only upon plates. Discussions of the subject with Capt. A. W. Stevens, the Army's famous aerial photographer, confirmed my hopes that infra-red cinematography would eventually prove the vehicle for making really effective aerial night-scenes.

When at last a motion picture film coated with a modified infra-red sensitive emulsion, Ilex DuPont Film Company's "Infra-D" was announced, I was among the first to test it. It was perfect for my purpose!

Soon after, an opportunity to use this technique on actual production came. Metro-Goldwyn-Mayer decided to produce the spectacular novel "Night Flight," in which much of the action would take place in the air, at night. Clarence Brown, famous alike as a director and as an aviator, would direct, and I was signed to have charge of the Aerial Cinematography. We made tests of aerial night scenes with every type of regular and SuperSensitive panchromatic film, and every possible filter. None suited either Mr. Brown or myself—something was lacking, even in the best of them. I had told Mr. Brown of my confidence in infra-red sensitive film for making such scenes, and between us, we persuaded the studio heads to authorize us to make tests with Infra-D. No plane was available for these tests, but test shots made from high buildings, and in the snow-covered mountains, clearly showed that at last we had a film which would give us the real effect of night in the air. We ordered a supply of film—and commenced without further ado upon the actual production.

We found that Infra-D film is capable of an almost infinite variety of effects. Used with no filter, or with only the lighter ones normally employed, it is an excellent SuperSensitive Panchromatic film, though slightly less fast than regular Superpan. But as you use heavier filters, its advantages and special characteristics become more and more apparent. When you reach the true infra-red filters—those from the Wratten No. 70 on—you enter a new realm. Using these filters, Infra-D film will give you the extreme contrast necessary for night-effects, giving supremely pictorial results. Moreover, it will "see" things invisible to the human eye. Its haze-cutting properties are uncanny. I recall at least one instance in which this was so noticeable as to be a positive disadvantage; we were making a scene which showed the mainplane, apparently lost above the clouds—out of sight of the land. We were flying at an altitude of 20,000 feet, high above the clouds. Our

(Continued on Page 22)



# RIDDLE ME THIS

**The Riddle:** What, in your opinion, can be done to improve the technical and artistic quality of panning and traveling shots? What are the most-needed improvements in equipments and methods?

**THOMAS J. GALLIGAN, A.S.C.**

As far as the equipment for panning and traveling shots goes, undoubtedly the greatest improvement that could come would be the development of a really silent camera—one that could be satisfactorily used at all times without a blimp. This would materially reduce the physical mass which must be moved in any such shots, and give us greater freedom and accuracy. Pending this development, there is a great need for a really well-balanced blimp. In the majority of designs now in use, the balance is poor, in most cases, the blimp is topheavy. Moreover, in many shots we find it necessary to mount a "Lupe" or some similar lighting unit directly above the camera, attaching the lamp directly to the blimp itself. This almost invariably further disturbs the balance, making the blimp "nose-heavy"—and this much harder to manipulate accurately. Either the design of the blimp should be worked out with this specifically in mind, or some system of counterweights, to counterbalance the added mass of the lamp, should be provided.

Another important mechanical factor is the tripod-head. From my own experience, I favor a combined friction and geared movement, allowing the Operative Cinematographer to pan and tilt with the gears on all slower moves, since by this method one can be sure of the very smoothest movement, and, when fast movement is required, to disengage either set of gears, and pan or tilt as with a free-head, with adjustable friction, in either case, having the gears to use in case movement in two planes is necessary, with only one movement fast. In this way, for instance, one can make a quick pan, at the same time following the subject up or down with the gears—impeccably and accurately. If, in such a case, you do not finish your movement with exactly the right composition, you can—thanks to the geared action—slowly and imperceptibly line up, without disturbing the audience.

The actual making of the shot naturally calls for a high order of mechanical and artistic ability on the part of the Operative Cinematographer, but, still more important, it calls for complete and understanding cooperation between the Operative and the First Cinematographer. The First Cinematographer must be able to trust his Operative implicitly, and the Operative, on his part, must not only have the ability to do his work well, but he must have the courage to bring to the First Cinematographer's attention any smallest imperfection in the shot, which might make it irritating to the audience. He should not be ashamed to ask for a retake if he feels he can really better the shot. He should not be afraid to insist on proper preparation and rehearsal of such shots, or to be sure that, in traveling-shots, a proper track is laid for the perambulator or crane. This matter of tracking is vitally important, despite the fact that it is often sighted in the rush of production. Recently, I experimen-

ed with one of the most perfect perambulators now in use I split an ordinary track, and laid one of the halves on the track, when the shot was screened the slight irregularity caused by running one wheel over this half track proved sufficient to make a noticeable jump in the picture.

But above all, the Operative Cinematographer's part in making these shots calls for diplomacy. He must be a practical psychologist, knowing just how to cooperate most perfectly with First Cinematographer and Director, and how to secure the most perfect cooperation from them, to the end that the mechanical phases of each scene may be as nearly perfect as possible.

**VICTOR SCHEURICH, A.S.C.**

There are two phases to be considered: the personal and the mechanical elements. Once a pan shot—or a traveling-shot, for that matter—has been decided upon, it is up to the Operative Cinematographer to execute it. He must have good coordination, and an eye for composition, he must know how to provide a good composition at the start and finish of such scenes, and at any halts during the movement. He must be able to time the swing smoothly, and make it seem natural.

The mechanical element enters here. For while a man can become accustomed to the use of any equipment, he can only do his best work when he has the best of equipment with which to work. There is all too often a tendency on the part of many studios to concentrate too much on what goes on in front of the camera, figuring that the

(Continued on Page 19)

(This question has been asked a group of the Second Cinematographer members of the A.S.C. in the end of obtaining the opinion of the men who actually make these shots—the Operative Cinematographers—Ed.)





# TREND of THE TIMES

## Worm Destroys Film

• The Kino Amateur magazine reports a discovery made by the Chemical-Biological research laboratories of the "Reconco"-Berlin according to which a very small sized worm is responsible for the cause of shrinkage and brittleness of aging film.

This worm working in large colonies lives on camphor, thus causing the base to become brittle and shrink.

The Reconco, the article states, has found not only a method of protecting fresh films from these worms by impregnating the surface of the film with a solution which hermetically seals the surface but has also worked out a process of renovating old attacked films by replacing the camphor and simultaneously destroying the worms.

Details concerning these methods are not disclosed.

## Fourth Dimension?

• A fake promoter in Spain was recently convicted for swindling investors on what might be considered a most incredible proposition. He claimed to have a device that would supply smell to motion pictures (as though some of them don't smell bad enough already!). The spectator while admiring a beautiful sea scene would naturally smell the sea. Close-up of actresses would be accompanied by a sweet scent.

We stand up to a point of "odor", this subject is too strong for our belief.

## Universal Focus

• According to a communication from Germany an optical engineer of that country claims to have perfected a new type lens for 35mm cameras that will keep all objects beyond six feet sharply in focus. No more follow focus if this proves to be true.

## Amateur Color Process

• Dr. Paul Knochle in the "Camera" for September, 1993, reports a new invention capable to render transparencies and paper prints in natural colors by a simple method. This process is called "Gasper Color" after its inventor, Dr. Bela Gaspar.

The negative film consists of a base carrying three emulsion layers. The up-

per layer is highly green sensitive and dyed with yellow dye. The next lower layer is red sensitive and dyed magenta. The lowest layer is infra red sensitive and dyed bluish-green.

After exposure the negative is developed and fixed in a normal way.

Now follows the most important part of the invention which concerns a method of chemically destroying all dyes except on places where silver has been deposited.

Finally the picture is placed in a reducer which destroys the silver, leaving a brilliant positive in natural colors.

It is claimed that the whole process can be completed within fifteen minutes.

No detailed information is given in regard to the chemicals used.

## Sound with X-Ray

• A member of the Institute of Physical and Chemical Research of Japan has a new system of sound recording which employs the X-ray in place of seen gas for the conversion of the electric current coming from the microphone into light waves to be photographed on the film emulsion. It is claimed by the use of X-ray the mechanical sound of voice is improved, operation becomes simple and power consumption is reduced.

## The Selenophone

• An Austrian firm is marketing a rather novel 16mm sound recording unit. The recording is done on a small strip of sensitized paper thus simplifying the various operations of developing. The paper sound track, it is claimed, can be projected two hours after the recording.

## Third Dimension

• According to "Cinepse" a French magazine, Louis Lumiere, well known French Motion Picture pioneer, has perfected a new third dimensional cinematographic process. A lecture on this process will be given at the French Academy of Science in the near future.

## Snow Effect

• According to reports from German studios the technicians of that country have evolved a new method of securing snow effects for picture use. They use a slow burning powder which throws off a flakey

salt resembling a snow flake. This ash rises in the air and floats, giving the illusion of snow falling. This has the advantage of not melting due to the heat of the lights on the set. They do not give the formula of this powder.

## Film for Language Teaching

• A brief article in the French Photo Revue tells us that a Professor Fry of the Institute of Languages of Amsterdam is employing sound film to teach foreign languages. According to reports, Prof. Fry is very enthusiastic over this method of teaching elocution.

## Direct Positive Print

• The Camera, a German magazine, tells us about a new direct positive process which enables photographers to make a positive enlargement on paper or any other base from any positive motion picture film. It is called the D P emulsion. It claims an exceptionally fine grain and 8x10 enlargements can be made very easily from any small size still or positive image.

## Pictures in English Churches

• According to an English publication a new society for production of religious films has been formed in London. The aim is to furnish every church with a complete projection equipment for the showing of a film of biblical interest after the sermon. An experimental installation in a church at Lambeth Road in London proved that through this new attraction the church was crowded to capacity. The Rev. Triplad stated that formerly only a very few attended services.

## Infra Red for Copying

• The British Journal of Photography reports that Infra Red plates have been recently used with fine success in copying old and faded documents and photographs.

## French Studios

• Recent reports in La Cinematographie Francaise credits France with 18 fully equipped Sound Studios for motion picture production. Fifteen are in or near Paris, while the other three are located on the Riviera.



# IMPORTANT

*to any picture*

---

ANY picture, made on *any* film, may prove a hit. But the fact remains that the majority of the big motion picture triumphs are being filmed on Eastman Super-sensitive "Pan" Negative with gray backing. In other words, this film seems to be an important factor in any picture's chances of outstanding success. That fact is vitally important to every cameraman and producer. Eastman Kodak Co., Rochester, N. Y. (J. E. Brulatour, Inc., Distributors.)

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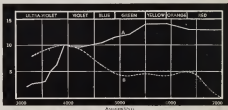
EASTMAN *Super-sensitive*  
*Panchromatic Negative*

# The New Studio Light

## NATIONAL MOTION PICTURE STUDIO CARBONS

### BALANCED LIGHT

These carbons have been developed especially for the motion picture studio. The color composition of their light is accurately balanced to the color sensitivity of modern motion picture film. This is apparent from the adjacent curves. This light duplicates the photographic effects of daylight without using filters.



Curve A—Energy distribution from the new 10-watt Studio Carbon Arc  
Curve B—Color Sensitivity of General Electric Photoflood lamp on Kodak film

**COOL** At equal photograph-light intensity, the new studio carbon arc projects far less heat onto the stage than



**NEW LAMPS** have been developed to use these improved studio carbons. These lamps are silent in operation. They maintain a steady arc and provide illumination of uniform intensity. Side arcs, scoops and spots are available.

**TRIED and APPROVED in the STUDIO**  
**A BETTER LIGHT**  
**for BLACK and WHITE PHOTOGRAPHY**  
**A NECESSITY for COLOR**



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## Color Control For Color-Films

(Continued from Page 11)

of color photography can be improved since by balancing the vibratory intensities of the colors used in direct relation to the mass and other factors, visual harmony will be attained and the result will be effectively pleasing to audiences.

No restriction will be felt in selection of colors, as it is primarily the correct intensity that is indicated, and once established it is then a simple matter to blend any color desired to that intensity scientifically removing all idea of personal theory or conjecture and placing the use of color on a solid, concrete basis.

In settings and backgrounds, all areas would be assigned related color intensities in correct tonal balance according to their proportion so that the combined visual effect of the completed scene would be in visual balance acting in harmony upon the visual apparatus of the observer.

For the player, and particularly the important characters, these new aids to the proper use of color would offer opportunities for building up distinction and effectiveness to an extent not heretofore possible—bringing out beauty and perfection in eyes, hair and skin tones that never before registered. Color science has now found that for each individual there is a definite color intensity range best suited to emphasize that individual's personality to the greatest extent.

The results from the psychological angle are practically unlimited, dependent only upon the ability and experience of those responsible for the artistic success of the picture. By modifying color and controlling what color is used in correct relation to other factors of mood, action and plot, the ultimate in colored pictures would bring audiences films of a beauty and appeal not dreamt of before—technically harmonious and in visual balance.

Creation of individual color tones for costumes for players in correct relation to their own coloring not only will result in emphasizing to a much greater extent the players' personalities and effectiveness of characterization, but will also add increased impetus to the present great scope of influence of studio designers and stylists on world fashions and trends by leading way to recognition of the value of correct color intensities for individuals.

Applying color balance and correct psychological use of color to motion pictures, considering surface and atmospheric color, contrast and analogy, lyrical color in relation to drama and mood, bringing the individual into proper relation to the other factors—all these point the way to making color in films vastly important and a truly significant force in the continued progress of the motion picture industry.

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### and THE QUINTUPLE PRINTER

which makes five prints, picture and sound, simultaneously from one negative with output of 400 feet per minute.

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### ILLUSTRATED BELOW

Sound Reduction Picture  
Track Projector  
Automatic Machine



## RIDDLE ME THIS

(Continued from Page 15)

panning and traveling-shot technique. There is also a great need for improved standardization of accessory equipment among the studios, as this would heighten the efficiency of the camera personnel, especially when extra cameras are used, and would naturally give the studios a wider variety of men to choose from, rather than merely being restricted to the men familiar with that studio's equipment.

DANIEL L. FAPP, A.S.C.

To my mind the question of pan shots is more an artistic problem than a me-

chanical one. A competent Operative Cinematographer, granted reasonably good equipment, with which he is familiar, can turn out panning shots which are technically good, but whether or not they will prove satisfactory in the completed production is quite another matter. Too often, such shots are not used naturally, they are dragged in by the heels whenever a character is to move, or to bolster up weak action. I believe that the greatest single step to improve these shots would be for the Director to consult the First Cinematographer more closely upon their advisability—and then follow the First Cinematographer's advice.

# USING INFRA-RED IN THE AIR

(Continued from Page 24)

position was nearly above Oceanside, California—about sixty miles or more southeast of Los Angeles, the cameras were pointing northwest, but the city and its environs were lost in clouds and a heavy haze. We made our scene satisfactorily, even allowing for the film's haze-cutting properties, we were sure it would not show us any unwanted land. But—the next day, in the projection room, all of us were amazed to see that the film clearly showed us the Palos Verdes hills, Los Angeles, and the Santa Monica mountains, sixty to eighty miles away, and absolutely invisible to the eye!

The infra-red sensitive films now available for motion pictures, including the "Infra-0" and kindred products of other firms, are modifications of the true infra-red sensitive emulsions used for still photography. The latter are intended largely for scientific or survey work, and accordingly disregard many features necessary for successful commercial use, such as keeping quality, gradation, contrast, and ease of manipulation. The infra-red sensitive one-films, on the other hand, sacrifice some small degree of pure infra-red sensitivity, and give in return the commercial advantages we must have in regular production. These films keep rather well, the elaborate refrigeration

systems so necessary for many hyper-sensitive emulsions are not needed. Moreover, air-express services makes it possible to secure absolutely fresh film in a matter of two days or less.

The contrast, while somewhat greater than that of ordinary pan and superpan emulsions, is by no means as excessive as that of the purely scientific infra-red sensitized emulsions. "Infra-0" and similar products may be used in an emergency for almost any type of work one would ordinarily do with SuperSensitive film. Unfiltered, or lightly filtered, it will match up very well, for contrast, gradation, color correction and general quality with scenes made on the more familiar emulsions. Except when heavy filters which cut out large bands of the more active visible light and pass the infra-red are used, "Infra-0" is quite similar to regular SuperPan film, though a bit slower.

For general purposes, the filter technique required is similar to that for ordinary SuperPan. Specifically, it differs from this accepted technique in much the same order as the technique for SuperPan differs from that used in filtering ordinary panchromatic, to produce an equivalent, normal result, one must use a somewhat heavier filter. That is, to produce a definite effect upon ordinary pan-

chromatic film one might use a G filter, for an equivalent correction upon SuperPan, one would probably employ a '23-A.' Similarly, using commercial infra-red sensitive one film, one would need about a "29-P" filter to obtain the corresponding correction.

However, the true advantages of infra-red sensitive film do not appear in this routine work, or with these light filters. Only when one definitely sets out to utilize the infra-red sensitivity, using the heavy filters which arrest most of the visible rays, and leave the infra-red rays a chance to act, does one obtain the real benefits of the emulsion. Using this group of true infra-red filters—from the Wyatten TQ on—one enters an entirely new realm. Filtered night-effects made on this film become more convincing. Aerial night-effects are, of course, literally made possible by this technique, but ordinary night scenes on the ground develop surprising possibilities. For instance, the strong infra-red emanation of ordinary incandescent lamps—even low-powered ones—register very strongly. It should hardly be necessary to install special lamps, batteries, etc., in automobiles figuring in such scenes, for in my own tests, I have been astonished by the way ordinary headlight bulbs picked up, even in broad daylight. I recall one scene of this nature in which we used this film, and in an extreme long-shot, the glow

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of a pair of ordinary headlights were visible for nearly half a mile.

An important consideration in making aerial night scenes is that the correction of film and filter must not alter the appearance of the planes shown on the screen. A blue-painted machine, for instance, would appear light grey when photographed with ordinary film, but would be virtually black when shown in the air, photographed with infra-red sensitive film and the requisite heavy filters. Similarly, a red or green machine would be dark in the first instance, and very light in the second. Realizing the importance of this factor, I made extensive tests even before being assigned to "Night Flight," and found that surfaces of white metal, or surfaces painted with an aluminum pigment, would remain virtually the same shade no matter what film or filters were used. Accordingly, the planes used in the picture were all painted with the aluminum paint—and, no matter what the conditions were, they always appeared the same on the screen.

The laboratory handling of infra-red sensitive film need not differ appreciably from that of ordinary SuperPan; the M-G-M Laboratory took the precaution of developing the scenes I made on "Infra-D" in total darkness, on the usual machines, and reported no trouble at all.

The use of infra-red sensitive film promises all cinematographers much. While it will hardly displace the present

types of film for general work, it brings a new and valuable auxiliary for many types of work. Its haze-cutting properties give the exterior specialist a new means of overcoming unfavorable weather and light conditions, and a new tool for making night-effects. But it is, to my

mind, of the greatest value to the specialist in aerial photography, for it opens up to him a new range of technical and pictorial openings, and enables him to keep his specialized work in step with the continued progress of production camerawork.



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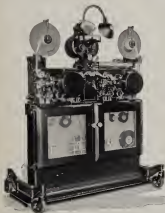
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## Utility Features New Light Crane

(Continued from Page 10)

wheel which is set at a convenient angle, and fitted with a lock so that the crane adjustment cannot be altered accidentally. The shaft upon which this wheel is set drives a worm gear which in turn meshes with a cogged sector, raising or lowering the crane-arm. A considerable variation in lifting-speed may be obtained by fitting single, double or triple-thread worms to this drive. The crane-arm is counterbalanced ingeniously, so that there is little or no variation in the energy needed to operate it at any elevation. This is accomplished by two counterbalancing springs, of helical type, connected to the arm by strong cables wound upon tapered drums, thereby automatically adjusting the counterbalancing leverage to the load.

The camera is mounted upon the end of the crane-arm and kept level by a pivoted mount and a conventional reduced system. Two seats are provided for Operator and Assistant Cinematographers, so that shots in which the camera is lifted from normal position to the full extension of the crane (or vice-versa) may be smoothly made—something which is extremely difficult with certain existing designs. These seats pivot, enabling the operators to make extensive panoramic shots conveniently, and are, moreover, adjustable for convenient use when the crane is in low positions. Brackets may be fitted for auxiliary lights, and two collapsible handles are fixed at the base of the arm so that the carriage may more easily be pushed or pulled in traveling shots.

The pan-and-tilt head upon which the camera is mounted follows the conventional design practice for blimp-type friction heads. It is excellently counterbalanced in its tilting movement, by means of strong helical springs. There is an interesting innovation in the horizontal, or panoramic movement, in that stops are provided by which the camera may be arrested at any predetermined point, silently and without jar. A channel is cut in the circular base of the head, and rubber-covered stops may be screwed into this channel at any point similar stops, affixed to the upper, or rotating portion of the head will engage these fixed stops, bringing the camera to rest in the desired plane; the rubber coverings insulating the stops from metal-to-metal contact, and absorbing the jar.

The present equipment is a semi-experimental model, and has since its completion been undergoing the strenuous practical tests of use on actual production. To date, it has been used by

three different Directors of Photography at the Warner Bros. Studio: Wm. A. Rees, A.S.C., Gaetano Guadio, A.S.C., and myself.

I have found the device to be extremely well-adapted to modern conditions. It is narrow enough to pass through any ordinary doorway (it is but 31 inches wide), yet it permits using the camera at any elevation from 24 inches (lens-center) above the floor to a height of nearly eight feet. It permits panoramic shots embracing very nearly the full 360-degree circle, even at the maximum elevation, while, by using the fifth wheel, and pivoting on the axis of the two rear wheels, the full 360-degrees may be encompassed with ease. Its movement is smooth and accurate in every respect. The unique steering system permits the device to be used in the most inaccessible corners of a set; it may be placed directly by a wall, or in a corner of a set, and, by steering the four wheels, it may be "crawled" obliquely away from the wall (or the reverse) and then pulled or pushed in a straight line, or steered in any direction. Since the operators ride with the camera, changes of elevation, combined with panning or any other movement during a scene are made very simple. Used simply in place of a conventional tripod, the device is not only convenient, but firm. Its weight—1100 lbs.—is in most instances sufficient to assure stability, without "tying down," and the crane-arm permits extremely speedy adjustment for camera height or position. It has been estimated that—quite ignoring the device's merits as a crane—its use in place of conventional tripods, rolling-tripods, "high-hits" and baby tripods can save a company over two and one-half hours in the course of a single working day, and my own experience confirms this.

As has been stated, this crane is a semi-experimental model, practical experience is expected to indicate some minor changes or additions which will facilitate the use of the device. After a period of practical use, it is planned to produce a number of these equipments, embodying, of course, the improvements expected, and to equip the studio with them as standard operating equipment.

Georges Benoit, A.S.C.,  
Honored

\* Georges Benoit, A.S.C., who has for some years been in France, has been honored by election to the Vice-Presidency of the Société Française des Cinégraphistes (The French Society of Cinematographers). M. Benoit, long a member of the A.S.C., and a former officer of the Society, was one of the founders of the French body, which is patterned after the American Society of Cinematographers.

## John Arnold Heads A.S.C. For Fourth Term

(Continued from Page 9)

tion and every conceivable type of personal service. The whole plan is aimed to make available to cinematographers the highest type of professional and personal business service that their economic condition may be enhanced, and that they may be completely freed from business worries.

President Arnold views the future with confidence. "The past year," he states, "has conclusively proven the inherent soundness of the American Society of Cinematographers. We have passed through the most trying times in the history of the Society or of the industry alike, and emerged with the respect and confidence of every member of the industry. We have brought forth a 'New Deal' in the relations between Cinematographers and their employers—a new spirit of cooperation—of fair play. These relations must be absolutely fair and equitable, favoring neither producer nor cinematographer at the expense of the other. The Society's one fixed policy is—now as ever—to bend every effort for the advancement of cameramen, both collectively and as individuals, never departing from the high ideals of honor and justice which have characterized the Society since its inception.

The creation of the ASC-Agency is an important step in this policy. It permits us to realize a new conception of service to cameramen, a type of service which has heretofore been available only to highly-paid players and directors, but never to the equally important camera-artists. Such a service for professional business representation has long been needed but a similar service for personal business management, publicity, and the like has been even more vitally necessary. With the ASC-Agency to provide these services, we confidently expect to raise the condition of Directors of Photography to new high levels.

Notwithstanding the importance of these new economic responsibilities, the Research, Educational and Social activities of the American Society of Cinematographers will not be abated. Rather, they will continue and increase, as the importance of the Society and its members increases. We have witnessed the birth of a new A.S.C. the coming years will see it marching steadily onward to new successes.

### Pictures in Paris Opera

For the first time in the history of the famous Grand Opera House of Paris, motion pictures will be shown in that famous institution for the benefit of the Legion of Honor. It is claimed all sound equipment will be immediately taken out of the theatre after this one showing.



Tuxen Dean

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## A. S. C. GOLF TOURNAMENT

(Continued from Page 8)

GEORGE CLEMENS, Toilet Set, donated by Mark Sandrich

KYME MEADE, 2 Pts. Whiskey, donated by H. N. Swanson

WILLIAM FOXALL, Electric Vibrator, donated by Nat Fanson

J. PEVERELL MARLEY, 1 Doz. Silver King Balls, donated by Adolphe Merjou

RAY RAMSEY, Cocktail Shaker, donated by Max Steiner

WALLACE KELLEY, Still Camera Sundash, donated by Hollywood Camera Exchange

## FOURTH FLIGHT

JAMES DALY, Pair Bausch & Lomb Binoculars, donated by E. D. Blackburn

BEN REYNOLDS, Telechron Clock, donated by Warner Studio Electrical Department

ALLYN JONES, Leather Golf Bag, donated by George Gibson

WILLIAM DANIELS, M-R 'Baby Spotlights,' donated by Molo-Richardson, Inc.

BEN WHITE, Merchandise Order, donated by Wheeler and Woolsey

ALFRED WILLIAMS, Set Matched Wilson Irons, donated by Warren Newcombe

AL ROBERTS, Gold Watch, donated by Smith & Allen, for the closest to the 13th hole

OTTO DYAR, 3 Rolls 'Pellin' 16mm Film, donated by Walter W. Bell

FRANK PHILLIPS, Set Matched Hagen Woods, donated by Ann Harding

J. D. JENNINGS, Whiskey Barrel Set, donated by Fearless Camera Co.

JOHN ARNOLD, "Rhaco" Pocket Finder, donated by Camera Supply Co.

JACK GREENHALGH, Eastman 6-20 Kodak, donated by Leo McCarey

HERBERT VAN DYKE, Merchandise Order, donated by Polly Moran

JOHN HIXON, Merchandise Order, donated by William A. Seiter

IRVING RIES, 1 Doz. Golf Balls, donated by Lynn Buell

WILLARD VAN ENGER, Cocktail Shaker, donated by Joe Nolan

A. RICHARD DORAN, Sweater, donated by Ralph Bellamy

## FIFTH FLIGHT

AL WETZEL, Set of Scheibe Filters, donated by George Scheibe

BERT LONGWORTH, Leather Golf Bag, donated by J. L. Courcier

HAROLD MARZORATI, Set Stone Fog Lights, donated by Lights, Inc.

BUD MAUTINO, Merchandise Order, donated by Hazel Forbes

JAMES COSS, 'Lexia' HCE Sundash, donated by Cliff Thomas

OLIVER MARSH, Sweater, donated by Jack Brand

OLIVER MARSH, Cigarette Lighter, donated by RKO Barber Shop

ROBERT BRONNER, Set Matched Irons, donated by Gary Cooper

MILTON R. KRASNER, 1 Doz. Golf Balls, donated by M. J. Abbott

MILTON BROWN, Merchandise Order, donated by Sidney Fox

## SIXTH FLIGHT

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EDWARD J. SNYDER, Set Matched Woods, donated by Carole Lombard

STANLEY CORTEZ, Leather Kit Bag, donated by George B. Seitz

ROBERT COBURN, Electric Drink Mixer, donated by Burns and Allen

DAVID RAGIN, Sweater, donated by Mel Shauer

PAUL LERPEE, Sweater, donated by Mel Shauer

JAMES GORDON, Merchandise Order, donated by William A. Seiter

## GUEST FLIGHT

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FRED MIRON, 1 Doz. Golf Balls, donated by Henry Hathaway

RALPH D. OWEN, Subscription to 'Variety,' donated by Walter Greene

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J. L. COURCIER, Six Bottles Champagne, donated by the Hollywood Reporter

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... and Other Features



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# AMATEUR MOVIE SECTION

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• **PROFESSIONAL** Criticism of the Amateur picture is a part of the service offered by the **AMERICAN CINEMATOGRAPHER**. Many are not aware of this. Hundreds of pictures have been reviewed this past year by members of the American Society of Cinematographers for the Amateur.

## Next Month . . .

• Another Professional will give you his opinion of the 8mm. He'll tell you of a picture he shot with this little camera. It's surprising how rapidly this infant has grown.

• There'll be a continuity that will let Dad play the star role. Of course there will be a baby in it. What's a Home Movie without a baby or child?

• The installment of prize winners for Backyard Movies proves exceptionally interesting next month. You will note there has been a wide variety in themes and backgrounds in those presented. Why not try your hand?



Elmer Gyer, A.S.C.

# Flying the "Rolleiflex"

by

Elmer G. Dyer, A.S.C.

**I**F YOU are sighing for new worlds to conquer with your camera—try aerial photography! It opens up an entirely new field to every type of camerist—the snapshooter, the technician, and the pictorialist alike. It can be as simple or as intricate as you wish to make it, and always it is a thrilling sport.

Modern miniature cameras are ideal for this type of photography. They embody almost every feature that could be desired—well-corrected, fast lenses, accurate, speedy shutters, compact, rigid bodies, and they have, either as regular or auxiliary equipment, large "direct" or frame-type finders. They are compact enough to be used successfully from an open-cockpit ship, and they have (with one or two minor exceptions) no bellows to be flattened by the slipstream from the propeller. They can be worked quickly and accurately, making it possible to get more and better pictures in a given time.

My own preference is for the "Rolleiflex" which I have used for a number of years, both on and off the ground. Often, when flying across country, en route to a location, I will use this little camera to picture interesting scenes over which we may be flying, or to photograph interesting cloud-formations, etc. The results have been very successful. I have found the construction of the camera to be unusually well suited to this sort of work—especially the large direct-

type viewfinder, which is extremely handy for aerial use. The spring which holds this finder erect should, however, be strengthened, or supplemented with a set-screw or clip if you use an open-cockpit plane. Similarly, if you plan to fly the ship yourself, in addition to making the pictures, a wooden handle, screwed into the tripod socket (a handle such as those supplied for "Ereos" movie camera) and a wire-release for the shutter will make it much easier to use the camera one-handed, leaving the other hand free to handle the flying controls.

There are three main types of aerial photographs: "Vertical," "Oblique" and "Horizontal." The vertical pictures are, of course, those made with the camera pointing straight down, as in aerial maps. As a rule, these pictures don't mean a thing except to the trained aviator or aero-cartographer—they aren't particularly interesting as pictures, save in the rare instances when the pattern of fields, roads, etc., may make an unusually striking composition. Also, they are neither hard to make, unless you have a hole cut in the bottom of the plane, as the air-survey people do.

Oblique pictures are made with the camera pointed obliquely down from the plane—looking down at an angle, exactly as your eyes do when looking groundward from a plane. A large proportion of non-professional aerial stills are probably in this group. You can shoot at almost any angle, and include part of the plane (wings or tail-group) if you wish, or leave the plane entirely out of the picture, getting only a picture of what lies below. An angle of from ten to thirty degrees below the horizontal is probably the best for such pictures, as it gives the most pleasing perspective.

The horizontal type of aerial still is, to me, the most interesting. This class includes pictures of other planes in the air, cloud-formations, and the like. The possibilities of such pictures are almost endless.

Regardless of what type of equipment you may be using, there are certain basic points of technique to be remembered. To begin with, use SuperSensitive (panchromatic) film, and filters. You will nearly always find at least a trace of haze in the air, and only through using SuperPan and filters will you be able to cut through this haze. Similarly, if you are shooting for cloud-formations, you'll appreciate the help of a filter which will darken the sky, and make the clouds stand out.

Vibration is the principal difficulty in any kind of aerial photography. In any plane, the vibration from the engine is great enough to force the use of fairly high shutter-speeds, and in an open type, there is a blast from the propeller which adds greatly to both the vibration and the otherwise simple matter of holding the camera. To avoid having your pictures blurred by the engine-vibration, you must reverse the usual procedure. Instead of resting the camera for your arm's firmly on some handy part of the ship, hold it in your hands, letting your body act as a shock-absorber, and use a fast shutter-speed. Shooting from a closed plane, your normal basic exposure on a bright day, with SuperPan film and no filter, should be about  $f/6.3$  at  $1/100$  second. Under extra good conditions, I have at times stopped down to as low as  $f/8$ .

Shooting from an open-cockpit ship, where you have the slipstream from the propeller as well as engine-vibration to contend with, you will have to speed your shutter up to at least  $1/350$  second, opening up your lens accordingly.

Focus is, of course, at the infinity-mark, the great depth of focus in most miniature-camera lenses is quite an advantage, as any parts of the plane which may be included in the picture will be reasonably sharp. Telephoto lenses are of no value in this sort of work, as a rule, for not only are

(Continued on Page 45)

# A New Outdoor 16m.m. Film

by

Dr. H. Meyer, A.S.C.



Taken on panchrome film using a K-5 filter.

**Editor's Note:** In keeping with the policy of this American Cinematographer to publish a technical analysis of any new piece of equipment or new brand of film we have asked Dr. H. Meyer, A.S.C., who is in charge of the Agfa-Anso Hollywood research laboratory, to present a technical description of the new Panchrome 16mm film which this company recently placed on the market.

THE absence of color sensitivity in the pure red is surely noticeable in the results of outdoor photography. Anyone who compares landscape photographs taken years ago, when panchromatic emulsions did not exist, will admit that the quality of a high orthochromatic negative shows up as beautiful as that of a modern panchromatic negative, that the cloud effects, the softness of the greens are rendered to an equally satisfactory degree and with the same perfection. The reason for this is, that pure red is very rare in natural objects and in general most colors and shades found outdoors are mixtures, so there is always at least one component which will be taken in by the green-yellow or orange sensitivity of a highly orthochromatic emulsion.

The different types of film now on the market are made to answer rather specific needs in regard to the different lighting problems of the photographer.

Superpan is noted as having the highest general speed. Therefore this film should be considered mainly for indoor exposures with or without artificial light; for night shots and in any case where poor lighting conditions are prevailing.

Panchromatic is rated as having approximately one-half the speed of Superpan and, being sensitive to all colors, will be useful for the widest application in outdoor or indoor photography considering normal lighting conditions.

Panchrome is about equal in speed to Panchromatic in daylight, but will not register spectral red, and its use should therefore be confined to general outdoor shooting.

When speaking of the Panchrome emulsion it should be kept in mind that this film is not sensitized by the generally known Erythrosine, but by a combination of dyes which not only increases the green-yellow sensitivity but also extends the color sensitivity far towards the orange.

Of practical interest are the filter factors for Panchrome which are given below:

Agfa Filter	Daylight Factor	Wratten Filter	Daylight Factor
No. 0	1.25	K1	2
No. 1	1.75	K2	3
No. 2	2.5	K3	4.5
No. 3	3		
No. 4	4		
No. 5	5		

Although exposure on Panchrome without filter will show pronounced color rendition as against that of any color-blind film, their use is recommendable, and the extremely low factors make the use of filters very practicable.

While in modern processing methods ways and means to correct faulty exposures are employed to a most satisfactory degree, the Panchrome type claims an additional inherent latitude which should prove quite valuable. This claim has been justified by many practical tests whereby rather wide differences in over and under lighted objects were taken care of by the latitude of the emulsion itself without the help of a corrective means during the processing.

The anti-halo backing makes it possible to use this emulsion for cross light effects and difficult exposure conditions which so often lead to poor results in case a film is used which is not protected against halation. The anti-halo film type enables the advanced amateur to safely shoot for the most daring light effects. In addition the anti-halo backing serves to prevent any edge fog while the film is being loaded or removed from the camera in daylight.

The absence of grain should be mentioned. This extremely fine grain is due to the building of the grain structure in the emulsion itself, as well as the special method of processing.

It is evident from this analysis that Panchrome is not a throw back to the early orthochromatic films, but is in keeping with the expectations of the advanced amateur who has built his experience on present-day Panchromatic emulsions.



# Continuity For Birthday Party

by

**J. Dickinson Reed**

**T**HIS charming little scenario can be very easily produced in any home. It may be either entirely composed of exterior scenes, or of interiors—or of both. As written, the first sequence (Scenes 1, 2, 3, 4 and 6) may be either interiors—played in a bedroom—or exteriors—played on the front porch. The remainder of the scenes are laid out-of-doors, in the garden, but may, if necessary, easily be moved indoors. While the story as it appears here is written around a little girl, it can easily be changed to suit a boy. It will require about 200 feet of 16mm film.

## CAST OF CHARACTERS

**Betty** The little girl for whom the birthday-party is given  
**Her Mother**  
**Her Daddy**  
**Her friends and playmates** As many children as you wish

Scene 1 FADE IN Long-shot of Betty and her Mother. Mother is just putting the finishing touches to Betty's best party-dress.

Scene 2 Medium-shot of same. Betty is looking into a hand-mirror while Mother fixes Betty's hair.

Scene 3 Close-up of Betty's face in the mirror.

Scene 4 Same as Scene 2. Throughout the sequence Betty is excited.

Scene 5 Close-up of dog, barking.

Scene 6 Medium-shot of Betty and Mother. They hear something, and walk out of the picture.

Scene 6-b (Only if previous scenes are made indoors). Medium long-shot of Betty and Mother coming through front door onto porch.

Scene 7 Long-shot of garden gate, with a number of children (dressed for a party) coming through, hailing Betty.

Scene 8 Close-up of Betty, smiling, and returning their greetings.

Scene 9 Close-up of Mother, also smiling.

Scene 10 Short flash of Betty, running straight into the camera until she more than fills the screen.

Scene 11 Long-shot of garden gate, same as Scene 7; Betty runs into the picture (center), and greets her guests.

Scene 12 Follow-shot, as Betty leads the group to a corner of the garden, where a table is set.

Scene 13 Medium-shot of the children giving Betty the presents and flowers they have brought her.

Scene 14 Close-up of Betty, excitedly receiving her presents. (Note: If this is made on an actual birthday-party you might add here close shots of Betty opening the presents.)

Scene 15 Long-shot of Mother, bringing in the birthday-cake.

Scene 16 Reverse of Scene 15, shot toward group of children, with Mother (carrying the cake) in the foreground, walking toward the group. The children register joyous anticipation of the feast. If you wish, you might add a short series of flash close-ups of some of the children, smacking their lips, rubbing their tummies, etc.

Scene 17 Long-shot, different angle. Mother sets the cake on the table, while the children sit down and eye the cake expectantly.

Scene 18 Close-up of Betty, in front of cake, preparing to blow out the candles.

Scene 19 Reverse-angle, long shot, with Betty (back to camera) in the foreground, and children, grouped about table, watching her.

Scene 20 Close-up of Betty, blowing out candles. This would be very effective if shot from a low position, bringing the cake and candles very prominently in the foreground, with just Betty's head showing above them in the background.

Scene 21 Long-shot of group at the table. Betty, in background, has just blown out the candles. The children applaud. Mother steps up and starts to remove the candles from the cake.

Scene 22 Close-up of Betty, cake in foreground (taken from normal level). Betty cuts the cake—she screws up her face as though it is an exacting task.

Scene 23 Long-shot of group of children, the cake is cut, and is being served to them.

Scene 24 Panoramic shot, close-ups of the children at the table, busily eating. This is most easily made with a 2 inch lens.

Scene 25 Medium-shot of Mother, standing behind the children. She hears something, looks off toward gate, and waves. She exits in that direction.

Scene 26 Long-shot of Daddy, passing through gate. He is carrying two big parcels.

Scene 27 Medium-shot of Daddy. Mother enters, greets him, he whispers something in her ear. She smiles, nods.

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# A Professional Looks At 8-mm.

by

Arthur C. Miller, A.S.C.

FROM a strictly technical viewpoint, and especially that of a professional cinematographer, it must be admitted that present-day 8mm equipment is not altogether ideal. But then, neither was 16mm equipment at the same relative stage in its development—nor was 35mm, either. I have used, I believe, every type of 8mm camera available in this country to date; all of them make good pictures, but they lack certain desirable refinements, and two rather important features. The first of these is a really adequate finder arrangement for as many lenses as may be supplied. The second, a footage-counter that can be relied upon. Of these, the latter must, I suppose, be dealt with by the manufacturers; but I have found that the amateur can very easily make himself an accurate finder for use with the 1½ inch "telephoto" lens most frequently used with 8mm outfits. It was one of the first accessories which I made for my own camera, and it is so easily made that I am sure that many readers of THE AMERICAN CINEMATOPHIL will want to make one for their own cameras.

My finder, which I built especially for use with my Stewart-Warner "Companion-8" 8mm camera, consists essentially of two parts: the mount, by which the finder is fitted to the camera, and the finder proper. Mine is made for use with the 1½ inch Wollensak Telephoto lens which I use a great deal, but by using a larger or smaller tube, the same principle could be adapted to any lens.

The mount is simply a flat piece of brass, cut to the desired shape. As it is made to fit on the side of the camera, almost exactly over the key that opens and locks the camera door, a semi-circular piece must be cut from the lower edge of this plate, to allow access to the key. On each end of this plate is soldered a piece of brass which forms a raised track upon which the finder slides; it is raised to allow the finder to clear the door-catch. As the illustration shows, on each of these two tracks is placed a round-headed screw, to hold the finder in place on the mount. In the center of the mount, at the top, is soldered a third brass block, which will eventually be drilled and tapped to hold a screw for registering the finder.

The finder proper consists of a piece of ½ inch brass tubing, cut to measure 3 3/32 inches overall; after a flat piece of brass has been soldered over each end of the tube. These end-plates must close the ends of the tube completely. In one end-plate, a small peep-hole is drilled, exactly in the central axis of the tube. In the other end-plate, a rectangular aperture 8/32 x 11/32 inch is cut. This is, of course, the front end of the finder-tube. With these dimensions, the field viewed through the finder corresponds exactly to that of the 1½ inch lens supplied for telephoto use on 8mm cameras.

The finder-tube is soldered to a flat piece of brass, forming a flange. Two key-hole shaped slots are cut in this flange, to fit under the two mounting-screws on the



Finder built by Arthur Miller, A.S.C., for his telephoto lens on the Stewart-Warner 8mm camera. The details are described in the text of his article. At the top is shown the finder fastened to the camera. At bottom is the bracket on which the finder tube is fastened.

mount. Obviously, both the screws and the slots must be carefully aligned, so that the finder will be level. Another piece of brass is soldered on the flange, at a point where it will come directly over the piece which has been soldered onto the center of the mount. When the finder is in place, drill and tap a hole through these two blocks, a screw run through the two holes will bring the finder into perfect registration.

To mount the finder on a Stewart-Warner camera, take out the two screws inside the camera, and remove the gate. Then put a piece of frosted film (the kind used as a leader on films returned from the Eastman processing laboratories) over the aperture, holding it in place with adhesive tape. When the shutter is open, you can see the image with the

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Arrow points to speed control of Bell & Howell films.

**N**OT long ago I had the good fortune to witness on the professional screen a motion picture called the "Invisible Man." To me, that picture seemed the very apotheosis of the application of trick work to the building of a motion picture story to produce results seemingly impossible outside the realm of the written word.

While the average cinematographer may not feel himself technically or financially able to duplicate this work with his own meagre amateur equipment, still, I believe that a discussion of the principles underlying trick work is bound to challenge the ingenuity of my readers to intelligent thought with the result that simple means will be devised for obtaining similar screen results.

Generally speaking, trick work may be divided into five classes. However, because of their interrelation it is sometimes difficult to state that such-and-such an effect can only be obtained by such-and-such a method. Let's list the five headings we mentioned:

1. Speed of the film through the camera
2. Direction of travel of the film through the camera
3. Exposing two or more scenes on the same strip of film
4. Changing the lens diaphragm during exposure
5. Use of before-the-lens effects, including masks, filters, and dissolving apparatus

There are certain models of Victor, Bell and Howell, and Cine-Kodak 8 and 16mm cameras which are equipped to take pictures at other speeds than the normal 16 frames per second. The Stewart-Warner also has this feature, and a few foreign cameras such as the Ensign are equipped with two or more speeds. Few amateurs have much idea of the uses for speeds other than the normal speed, even though they have read and heard of the advantages of owning a camera which has these speeds. Perhaps the chief advantage (so they are informed when they buy the camera) is trick work. Let's see just what trick work can be done with cameras having sub-normal and super-normal speeds.

Slow motion is something most amateurs know about, but it is a rather overworked selling theme. I should venture the guess that of all the cameras in use today which have "slow-motion" speeds, not one in a hundred is ever called upon to use it. Slow motion is nothing more than taking a movie with the exposures made faster than the normal speed and the projection at normal speed produces the

## Cinetricks

effect of slowing down the action pictured. Slow motion is, a condensing term, it should be called "altered motion"—motion slowed down so the action may be observed at leisure.

I know of several college and high school athletic coaches who have purchased cameras having slow motion speeds (64 frames per second is regarded as sufficiently slowing action in amateur cine cameras) for the purpose of observing the action of their athletes in action, only to experience complete disappointment because the results weren't what they wanted. In professional work, a film speed of only four times slower than normal is not even considered slow motion, for the reason that action is not slowed down enough to be satisfactory. Slow motion is employed generally for only two purposes—one, to find out just how humans or animals move their muscles when traveling at high speed, and two, to study the action of high speed mechanisms.

There are other purposes, of course, to which slow motion may be usefully applied, but the two mentioned are the usual reasons for the purchase of a camera with slow motion speed.

If, however, we forget about this rather narrow band of activity which is based on taking motion pictures at faster-than-normal speed, to wit, "slow motion," we do find other uses for the above-normal speeds. For instance, the amateur has many opportunities to improve his picture-making if he uses film speeds of 24 or 32 frames per second.

Cameras available to amateurs at this time are pitifully similar to those offered the avid enthusiast some years ago. It is lamentable that manufacturers of fine amateur movie cameras found it necessary to build them with only one shutter speed, and just when still cameras had educated amateurs to the possibilities of split-second exposures with such cameras as the Graflex and Graphic and other "speed" still cameras having shutter speeds up to 1/500 part of a second, amateur cine cameras reverted to the old days and were all built with but one shutter speed! Only two cameras have variable shutters to my knowledge—the Eastman Special and the custom-built cameras built by Eric Beaudt.

So, in reality, amateur cine cameras which offer speeds of 24 and 32 frames are really nothing more than a compromise. These speeds are built in because it is a less expensive way to build cameras which can permit picture-making at shutter speeds which blur the picture less than they would at 16 frames per second. For instance, we have found that a cine camera having a shutter speed of 1/25th of a second at 16 frames per second will record fast action such as a horse race or a Spring Dancer with less blur if film speeds of 24 or 32 frames per second are used. This means a slight slowing-down of the action, naturally, but the real reason for doing this is to minimize the blur because the shutter operates at 1/37th or 1/50th of a second. Also, it has been found that pinpoint photography at 24 or 32 frames are smoother, for the same reason.

Doubtless I will be the recipient from outraged amateur cine camera manufacturers of missives for should I say "missives"? of condemnation for the thoughts in the preceding paragraph. But I have in my files a number of letters from amateurs who graciously answered a small classified advertisement I ran some months ago as to the requirements of the amateur for an "ideal" camera. In every one of these was the specification "must have variable shutter."

# Motion Control

## Part One

by

Wm. J. Grace



Arrow points to speed control of Victor Model 3.

I fully realize the fact that it might cost a bit more to build cameras with a variable shutter, but if that makes the camera better, the public should have it.

Now, suppose we consider the use of film speeds slower than normal. Although it isn't used so much these days, the professional comedy of yesteryear invariably used quick-action. This is merely taking the picture at less than 16 frames per second, the screen result being unbelievably quick action of the characters. The comedy cop and the comedy scallawag of old ran many a rife at terrific speed. Amateur cine cameras having 8 frames per second speed will make pictures like this to the great delight of the audience if the intelligence of the cinematographer is employed. The filmer must remember, however, that at 8 frames per second, the shutter speed is only  $1/12$ th of a second, and action will be greatly blurred, an effect, however, sometimes desirable.

But film speeds of 8 frames per second were primarily built into amateur cine cameras for another reason, explained at length in most instruction books. Although not as necessary today with our super-speed emulsions, the older amateur cameras had to have some way to take pictures under extremely poor light conditions with slow emulsions, even though a fast lens was used. Thus was born the 8 frame speed. It is carried over into present-day camera more, I think, because the precedent had been set.

In using the 8 frame per second speed, an amateur must keep in mind that any action taken at this speed will appear on the screen just twice as fast, so if normal action is desired on the screen, the moving characters must be reminded to act half as fast as they normally would. I have seen movies made under light conditions which required 8 frame speed to get enough exposure which screened as if they had been made at 16 frames per second, and the secret was that the action was taken with the characters moving slowly.

Film speeds below 8 frames per second are seldom used, in amateur work at least, because no amateur camera will dependably operate more slowly. Some of the 700 Filmos WILL work at 5 or 6 frames, but the governor then runs so slowly that it cannot be depended on for accurate work. Seldom, if ever, are speeds under 8 frames per second used. From 8 frames, the work then becomes single frame work, or animation. This was discussed in last month's article, "CINE SYNTHESIS."

A word now as to the relative exposures at different film speeds. You cannot, you know, set your lens at the correct diaphragm opening for 16 frame speed and expect the film to magically compensate the exposure requirements if the camera is run at some other film speed. For instance, if the exposure meter indicates that f 6.3 is the correct diaphragm opening for a given shot at 16 frame speed, the

area of the lens opening (and hence, the diaphragm opening) must be changed if a film speed of 32 frames per second is to be used. Twice as much light must be admitted to the film at 32 frames because the shutter allows only half as much time for the light to act on the film. As each stop means a difference of 50 percent increase, we must use two stops larger, or f 4.5, to obtain correct exposure.

Working the other way around, we see how the 8 frame speed allows the proper exposure under certain light conditions which would not give enough exposure at 16 frames per second. Suppose we wanted a scene which our meter indicated required an exposure at 16 frames speed of f 11. Unless a Dallmeyer f 0.99 lens were on the camera, the picture would be impossible at normal film speed, but if we run the film at 8 frames per second, the time of the exposure is doubled and the lens opening may be halved. Halving the diaphragm opening indicated f 8 gives f 11.5, and the picture is possible. Also, the latitude of the film may even allow the use of f 1.9 for enough exposure.

And now let us summarize the discussion of the first general division of trick work. We have seen that "slow motion" is the taking of motion pictures at a rate faster than the normal speed of 16 frames per second (remember, we are talking in this series only of amateur work).

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Arrow points to speed control of Eastman Cine Special.



# Shooting Desert Patrol

by

C. W. Herbert, A.S.C.

**Editor's Note:** Every amateur must admire the Magic Carpet of Movietone. They are usually of the type the amateur could make on his trips and tours. Mr. Herbert is one of the crew of cameramen employed by the Fox Film Company to make these pictures. In this article he tells you about one of his recent assignments: Desert Patrol.

**W**ITH the subject matter and location definitely selected for a complete travelogue film, then comes the task of putting on to celluloid the various ideas which have inspired the operator, whether professional or amateur. A complete proposed scenario is of course the best guide to follow, but a rough outline will suffice if you do not feel the need of a scenario.

"Desert Patrol," one of the Magic Carpet of Movietone travel films, was built up from a scenario foundation. This story is of the "Life of the Saharani, the dromedary mounted troops attached to the Italian Army in Tripolitania, assigned to patrol the vast stretches of the Sahara.

Being a film with an organized group of people as the subject, each and every scene must of course show the same people. Variety must therefore be sought in backgrounds and daily activities of the subject. Obviously the easiest course to follow would be to film the Saharani from morn 'til night, using scenes that portray work, play and hardships, backing up and front planning each and every scene with atmosphere of the location.

Down in the desert comes almost with the sun which boils over the flat horizon like a huge ball of red fire as its rays penetrate the sand particles in the atmosphere. Such a sun is easily photographed by application of a heavy filter and stopping down the lens. By using a telephoto lens, the effect is intensified. A dromedary, a palm tree and a Saharani silhouetted against the skyline complete the picture.

Reveille commences the day for every military unit. A close-up of a bugler tells the story and scenes of the soldiers getting up follow naturally. Human interest scenes such as burros and chickens around the camp and close-ups of types of the soldiers yawning are indispensable.

To emphasize the effect of early morning, it is well to arrange some shots against a clear blue sky, with light coming from one side so as to cast long shadows. White objects with one side light and the other shaded against a blue sky are most suitable for these scenes. The Saharani bugler with his white uniform stood out in bold relief against a black sky, accomplished with a heavy red filter and panchromatic film.

Some troops start the day with a big breakfast, but the Saharani are content with strong sweet tea which each man makes for himself. Here scenes can be made of the men tanning a small precious fire, peering out the thick mixture and drinking. Head close-ups permit an intimate introduction of the types of the men.

Flag raising is always in order, but so commonplace that it was easily left out without injury to the story.



Dromedaries, the backbone of the troops, receive first attention. Here is an opportunity to call attention, in dialogue or title, to the fact that these desert ships possess the remarkable ability to go without food or water for days. You can always get a laugh by a head on shot of the dromedary's mouth, especially when he is chewing.

Soldiers must work, and work provides action for motion pictures. Following the rule of seeking out the typical and interesting features, crude irrigation pumps worked by man power to make the desert bloom, as well as plowing with a dromedary hitched to a Biblical time plow, fit in nicely. Close-ups of small boys swimming in the water hole as the men dip out the water, and a follow shot of the crude plow making a furrow are in order. Other activities which provided action and interest are soldiers washing clothes, mending tunics and clipping hair from their mounts. Here again is an opportunity to point out an interesting fact, that camel hair coats that parade on Fifth Avenue start to grow in the desert.

All of the above features are easily worked out with general views, showing the palms and fortress background and the invaluable close-up to bring your subject nearer to your audience.

All work and no play is neither good for the Saharani or your film. Desert entertainment, commonly called a "Fantasia," fits in nicely now. It is an easy job here while everyone is in a playful mood and music is in the air. This type of material with the native music of drums, flutes and gaitian pipes, lends itself particularly to sound sequences.

Occasionally as you stage a scene the extras around the set provide some unexpected shots that are infinitely human. During the filming of the Fantasia small boys shinned up

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# BACKYARD MOVIES

## Movie Film Free

We reproduce on this page two little plots that win the 100 ft. rolls of 16mm picture-movie film. Remember that we give away each month not less than one 100 ft. roll of film for plots and cinematists such as which we print. Read these plots over and see for yourself how easy it is to win a roll of film free.

Oliver Tucker, one of this month's winners, is a typically progressive reader. His scenario, based on the use of a title for filming close shots of insects, etc., reached us a week before our article on the subject went to press last month! Congratulations, Mr. Tucker!

For the benefit of those who may not have read the article referred to, we will state that any type of title fitted with a supplementary lens may be used. The support for the title-card should be folded out of the way, or if this is not possible, removed, and a wire frame slightly larger than the actual field, and about 1 1/4 inches closer to the lens than the actual plane of sharp focus, as represented by the normal position of the title-card. With the lens focused at the infinity mark, and stopped down exactly as though photographing normal action, it is easy to get good "macroscopic" movies of insects, etc., with any type of 8 or 16mm camera. Simply line up the frame to include approximately the field you desire, with your insect-actor about 1 1/4 inches beyond the frame—and there you are!

## Death in the Backyard

(With Apologies to Ernest Hemingway)

Scene 1 Close shot of a plate, with flies clustered about it. (Put the plate on a table in the yard, smear a bit of honey or syrup on the plate, and get a full shot of the plate with the flies buzzing around it. This shot will probably not need the title.)

Scene 2 Medium-shot of kitchen-window. Two hands reach out carrying a freshly-baked cake, which is set on the sill to cool. (A white frosting is preferable for this.)

Scene 3 Close shot of a fly on platter, made with the title. The fly leaves and buzzes out of the picture. (If you can show him being frightened away by a wasp, you are in luck!)

Scene 4 Close shot of the fly on the cake. (Made with title.)

Scene 5 Close shot of the fly cleaning his legs and wings. (The writer has not succeeded in getting this shot, as his actors seem nervous. It may be omitted.)

Scene 6 Close-shot of a spider starting to spin its web. Cook the spider onto a flower. Place camera on a table or other firm support, pointed toward

some shade, with the subjects back-lighted. Photograph the spider as it crawls over the flower and drops off. Raise the flower to keep the spider near the center of the picture. This is intended to suggest the making of a web. F.8 should be about the right exposure.

Scene 7, 8 A couple of shots of bedewed spider-webs. These should be taken early in the morning, without the title, and with the camera perhaps three feet distant, pointed toward the shade so as to give a dark background. The web should be back-lighted, and scene 8 made closer than scene 7, and from a slightly differing angle.

Scene 9 Close shot of spider, sitting at the center of his web, waiting.

Scene 10 Close shot of fly crawling over a person. Make this with the title, and show the fly crawling over someone's arm, ear, or better yet, over a bald head. Finish the shot with a hand frightening the fly away.

Scene 11 Extreme close-up (made with title) of a flesh, well-made spider-web. The shot should be back-lighted, and a large black cloth—such as a focusing-cloth—should be hung about two feet behind, to give the necessary contrast. About f 5.6 at 7 a.m. should be about right.

Scene 12 Short flash of the spider, as in scene 9.

Scene 13 Close-up of web, as in scene 11. The fly blunders into it, and is caught. (Catch a fly without injuring it, then gently toss it into the web, in the center of the camera's field.)

Scene 14 Close-shot of the spider, as scenes 9, 12. The spider feels the movement of the web, caused by the fly's struggles, and hurries over to investigate.

Scene 15 Close shot of the fly, struggling in the web, as scene 13. The spider enters and dispatches the fly, and wraps it with web. Stop the camera after the spider leaves (if it does) to wait until the fly quits down. Be ready for the spider's return, when you must photograph (from the same set-up) the spider cutting away the various strands, and carrying its victim away. (This should be the end, but if you want to

be particularly gory, you can try to get some shots of the spider eating the fly.)

THE END

OLIVER TUCKER

Burlingame, California

## Something Always Happens

This picture can be made in the normal manner, or with the Lubitsch technique of "I'd Be Delighted To," using only close-ups of feet and legs, hands and arms, etc. As written here, the script is for the latter treatment.

Scene 1 Close shot of a telegram being opened.

INSERT Telegraph-blank bearing message.

Mrs. Geo. Smith,  
234 Blank Ave.,  
Blank City.

Moving again; stop need your help; stop leave George for a few days; stop give us a hand; stop love, Sister Sue.

Scene 2 Close shot of hands (feminine) packing a suitcase.

Scene 3 Close shot, bottoms of front-door. Door opens, and a pair of trimly-shod feminine feet pass through; this should be a knee-length shot, showing the suitcase held in the hand.

Scene 4 Close shot. The same feet approach a taxi parked at the curb, they stop, while the suitcase is given to the driver. The feet then enter the cab, and the door closes behind them. The cab then starts off, while the camera pans around following it to a long-shot as it disappears down the street. Fade out.

Scene 5 Fade in. Close-up of feminine feet (the same ones) climbing the step of a Pullman.

Scene 6 Close-up of the wheels of a locomotive. The wheels start to revolve and move out of the picture, the tender, and the wheels of a couple of coaches pass. Fade out.

Scene 7 Fade in. Close-up of clock, indicating 6:45.

Scene 8 Close shot of front door, from inside. The door opens and a pair of masculine feet walk in. The door closes.

Scene 9 Close-up of hat-rack. A man's hand reaches into the picture and hangs up a man's hat.

Scene 10 Close-up of note pinned to a pillow. A man's hand reaches in and picks up the note.

INSERT Note, written in feminine hand.

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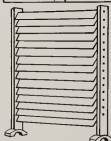
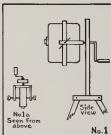
# OPTICAL PRINTER "WHIRLS" MADE WITH ANY CAMERA

One of the most bewildering effects seen in professional pictures is the "whirl," in which everything seems to be spinning around. These effects are usually made in the Optical Printer, and are used for a variety of effects, from comedy effects of dizziness to "arty" transitions and backgrounds for optical montage sequences. At first sight, they seem too difficult to be attempted by the non-professional filmer—but with the aid of a simple attachment which can be made by anyone who is handy with tools, such effects can be made with any type of 8 or 16mm home-movie camera.

Sketch No. 1 and 1-a explain the whole trick: a simple revolving cradle or vise holds the camera in any position, and permits it to be spun at any speed. The actual construction of the gadget may of course be varied to adapt it to any type of camera; it is essential that the lens and the axis of rotation be well aligned. The camera must, of course, be firmly fastened, so that it will not move out of place during the shot. Since most cameras have a catch on their release-trigger, to keep the camera going without the necessity of keeping one's finger constantly on the trigger, it is easy to make these shots, merely starting the camera, and at the appropriate moment, turning the crank that will revolve the assembly. If, however, you have one of the few cameras not equipped with such a catch, or if you have had the catch removed, you can hold the trigger down with a strip of adhesive tape.

Now for a few ideas on how to use the gadget!

Imagine a sequence showing a couple of kids boxing in the backyard—one lands a steamy haymaker on his opponent, making him reel dizzily. Can you visualize the reaction if, on the screen, you showed the apparent view of the dizzy boxer, with the whole world—including his opponent—spinning dizzily around? Well, make your sequence this way: a routine succession of shots showing the two boys boxing. Finally show Camera, Jr. starting his big punch. Then a short flash of the glove rushing right into the lens—the gadget helps here, for you can turn the camera upside-down, and shoot the scene backwards, that is, have the boy place his glove right on the lens, and then draw it back, while you shoot at a speed of 12, or even 8 frames per second, to speed the action. Then a normal close-up of the glove landing on the boy's jaw. (If your fighter doesn't know how to "pull" his punch, you can shoot this in reverse, and slightly under-speed, too.) Then a big, normal close-up of the fate of the boy who did the hitting: midway through this scene, start to revolve the camera, and cut to a longer shot—still spinning



—which shows the boy and more of the background. Then a normal close-up of the second boy slightly dizzy, and registering astonishment. On the screen the effect is that the first boy landed a regular haymaker, and made the other chap so dizzy that the whole world spun

around. Some wallow!

Oh—suppose you are an aviation enthusiast. Did you ever try to describe the sensations of a tailspin to non-fliers? Why not show it on the screen. Get a shot of a plane in the air starting a spin. Then take a vertical still of the ground—say of a familiar town or airport, and mount it in your title-board. Get a still taken from a plane, giving the view you would normally see from the cockpit, cut out the background, and mount the still on the front of your gadget, so that it will frame the still on the board. Then start your scene, spin your camera for a few turns, straighten out, and cut to the shot of the spinning plane leveling off—and you've shown your spin-sensations very easily and effectively!

Your gadget can also be used for trick transitions, ending one scene in a spin, and beginning the following one the same way, then cutting the two together at the top of the spin—Arthur Campbell.

## Walking the Plank

Both professional and amateur producers every now and then are confronted with a "thrill" shot where the hero (or heroine) is supposed to escape the villain by crossing a gorge, or going from one building to another on a tight-rope—but the actor doesn't qualify as a tight-rope performer. But don't be embarrassed—the camera can carry off the situation perfectly. If your hero can't walk a tight-rope, he can surely navigate a nice, broad plank. So set up your plank, and camouflage it with a rope tacked to its nearer edge. Frame the picture so that only the actual thickness of the edge of the plank shows—and if this is camouflaged by a rope, the shot on the screen will show your hero walking the rope! He must, of course, go through the motions of a tight-rope walker, and as the plank will bend and sway as his weight passes over it, the effect will be perfect. To gain the effect of height, shoot upward from a very low angle, putting the plank at a corresponding angle, so that only the edge shows. It is usually a good idea to hide the ends of the plank with a small pile of stones, or something of the sort. Properly done, it's a swell trick!

—Arthur Campbell

## Something New in Screens

Our French contemporary, "Cine Amateur," of Paris, recently published an interesting description of a new type projection-screen for amateur and professional use. This screen is composed of strips of cellulose-acetate arranged in the form of a Venetian blind, or shutter. A simple pull-string arrangement allows the user to vary the angle of the strips. It is claimed that these screens give very surprising results, and that by experimenting one can place the strips at such an angle that projection of exceptional brilliancy can be had even in daylight.

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The basic Ciné-Kodak Special model, with Kodak Anastigmat f.3.9 lens, 100-foot film chamber, and set of six masks, is priced at \$325. Estimates for adaptations to scientific or technical work made upon request. Ask your dealer for the free Ciné-Kodak Special Book.

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isn't an  
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it isn't a  
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100-foot or 700-foot film chamber may be interchanged on the Special without removing it from Ciné-Kodak Tripod.

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# WHEELS OF INDUSTRY

## Dealers "Value Book"

• Something that has been talked about in the photographic industry for years as being essential to good business practice, is a basic value on all second hand articles along the same line as used by the automotive industry in their "blue book."

A book of this nature has finally been compiled by the Wiltshire Publishing Company of Los Angeles.

Earl T. Bouden, long associated with photographic enterprises, is responsible for the book. Listed among his contributors are E. M. St. Claire, of Agfa-Arco Corp.; Jos. Farnan, of Ampro Corp.; F. R. Abbott, Baugh & Lomb Optical Co.; E. A. Carlson, Bell & Howell Co.; T. R. Craig, Craig Movie Supply Co.; Jack Van Holt, Eastman Kodak Co.; James S. Yulie, Eastman Kodak Stores; E. M. Helff, G. Gernert, C. H. Rafka, Victor Arimatograph Corp.; G. Sioupe, E. Lenta, Inc.; H. M. Lande, Spencer Lens Co.; and R. M. Linn, Wiltshires.

It is said the volume will contain approximately 250 pages, and will contain in addition to the "trade-in-values" many formulas and helpful hints.

## Sound on Film Library

• According to an announcement from J. Navilo of Brooklyn, N. Y., that company has added to their library of films a number which have sound on the film itself.

With the growing popularity of the sound on film projector, it is believed many will turn over to this type of projector as in most instances they will show the silent film and of course the library subjects now being offered with sound will help to diversify the program.

## Bi-Post Lamp Now Made in 2000-Watt Size

• The Incandescent Lamp Department of the General Electric Company, Nela Park, Cleveland, Ohio, announces the adaptation of the bi-post base construction to the 2000-watt, 115-volt G-48 bulb lamp.

The application of the bi-post design principle to this popular motion picture studio and spotlight lamp insures a more rugged lamp and one in which the relative position of the base and light source is determined entirely by the levels of metal working accuracy.

Its maximum overall length, from shoulder of prong to center of filament, is 5 inches and it has a life of 200 hours.

## Harrison Multi-Filter

• According to Harrison and Harrison, that company has originated what they term their Multi-Filter. This filter contains from three to four filters on one piece of glass. Each filter, however, is definitely marked. The yellow filters for instance contained on one glass are the K-1, K-2, K-3 and G Filters. The separation of each of the filters is plainly marked.

One glass also gives the complete line of red filters. By means of these filters the photographer has practically all of the popular type of filters on two pieces of glass.

## Berndt Galvanometer

• Eric C. Berndt of New York City announces a Recording Galvanometer. This is described as being complete with optical system and exciter lamp ready to install in 16mm or 35mm camera or recorder.

This meter requires a 6 volt battery its overall dimensions are 5 inches long by 3 inches wide and 3 inches high.

## "The Ten Contax Lenses"

• Carl Zeiss, Inc., have recently published an interesting brochure, "The Ten Contax Lenses," describing the wide range of Zeiss "Tessar," "Sonnar" and "Biotar" lenses for the Contax Camera. Even for non-users of this popular miniature camera, the booklet is of interest, for the author, Dr. K. Wolter, of the Carl Zeiss optical laboratories, has included an excellent discussion of the practical phases of photographic optics, treating the action of lenses, focal length, angle of view, perspective, brightness of image, speed, definition, resolving-power, air-bubbles, depth of focus, etc. A description of the various Zeiss universal, speed, telephoto and wide-angle lenses for the Contax follows. The book also includes a description of some of the very useful accessories developed for use with the Contax: multiple, tele, wide-angle and sports finders, supplementary lenses, a special holder for mounting spectacle lenses over the finder-eyepieces, a very practical collapsible sunshade, reproduction apparatus, etc. "The Ten Contax Lenses" may be obtained gratis from Carl Zeiss, Inc., 485 Fifth Ave., New York, and 728 So. Hill St., Los Angeles.

## Ilford Booklet on Night Photography

• Users of plate-cameras will be interested in a new booklet issued by Ilford, Ltd., Ilford, London, England, entitled "Night Photography with Ilford Hyper-sensitive Panchromatic Plates." It gives a valuable discussion of night photography with these new plates, which appear to be a distinct advancement in super-speed emulsions. It is hoped that the same emulsion may be made available for miniature-camera use.

## "The Cinematographer's Book of Tables"

• The Cinematographer's Book of Tables, has just been issued by Fred Westenberg, of Hollywood. It is a pocket-size handbook, containing, in tabular form, information often vitally needed by all cinematographers, professional and amateur alike, in their work.

Among the more important topics treated are the types of lamps used, their wattage, life, base-type, etc.; angles of view and size of field of 16mm and 35mm camera-lenses; an outline of make-up for different types, transmission-graphs of the more important filters, filter-factors, with an f-value compensating chart, dynamic symmetry, timeshutter values, f-shutter values; time-footage tables for 16mm and 35mm film, depth of field for various lenses at all stops, supplementary lens details for 16mm cameras, cinematometry, projection tables for 35mm, 16mm and 8mm film and aperture specifications for 35mm and 16mm, 16mm camera identification-marks, developer formulae, and tables of metric and U. S. weights and measures, with conversion tables.

Mr. Westenberg has produced a truly valuable reference work, which should be in the hands of every cinematographer. He is to be congratulated upon his painstakingly thorough treatment in assembling so much vital information in so small a volume.

## Aluminum Film

• According to published announcement in the *Filmtechnik* of Germany an aluminum film, standard size, is being developed. Projection is said to be obtained through reflection of the image instead of the normal transparency method. The main objection, according to experts, is the loss of light through reflection.





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# SHOOTING DESERT PATROL

(Continued from Page 35)

palm trees to get a good look. Hinging precariously to the trunk of the trees, they sway in rhythm to the music and beamed with delight. In moments like these a telephoto lens is indispensable to grab off a close-up. If you make a point of glancing around as you film a scene, many a great shot can thus be added to your bag.

Saharan ride dromedaries for miles and miles, yet in headquarters they must drill like ordinary soldiers on foot. Drill parade gives another opportunity to work in local atmosphere with a background of mud plastered fortress, a minaret, and sentry tower projecting their heads skyward. General views give an opportunity for a mass shot, always effective with troops, and the usual close-up of the commanding officer furnishes variety. A low shot looking up at the commanding officer presents him in a more impressive aspect and increases the significance of the scene. Another low shot as the men march over the camera gives your sequence personality.

With the introduction, work and play of the story tucked away in cans, the more unique phases of the life of the Saharan need covering. Military police preserve order in crowded cities, the coast artillerymen maintain the security of the coast line while the Saharans patrol the desert as they face its hardships. Nothing typifies the terror of the desert like a sandstorm which incidentally provides plenty of action to give a punch to your film.

When spring has made its entry into northern climes and trees bud, the desert feels its influence in the hot winds which

blow up from the south. To obtain a good sandstorm requires some perseverance and luck. If your stay in the desert is timed around the "Sirocco" period, then it is easy. Rolling, over shifting dunes are the logical background for the sequence. Saharans and dromedaries struggling up the shifting sand dunes against the merciless wind as they patrol the trackless desert, and make camp amid a blinding storm leave a convincing impression. A close-up of a dromedary climbing a steep hill by using his front knees and rear feet as supports for his high awkward body shows how this beast adapts himself to the treacherous desert. To catch the effect of realism, one shot of shifting sand as the wind whips over the crest of a dune completes the story.

The first day of these sand storms is by far the best for photographing since enough wind and sand are blowing to give your scene plenty of action and at the same time depth. Later on in the storm the air becomes so filled with sand, and the light of the sun is obscured so that your scene cannot show any distance or detail. Of course sand storms can be faked by the use of aeroplane propellers if you are fortunate enough to find them in the heart of the desert, but such scenes cannot have much depth and still look realistic.

Mass action of troops provides the camera operator with abundant opportunity to create spectacular scenes, but choice of location is all essential. If the terrain is flat and your camera is low, then as the mass moves towards the camera the first few men block out those behind them and the effect is lost. One of two alternatives are at your disposal—either find a high position for your camera to look down on the mass or else plant your troops on a hill sloping towards the camera. Most scenes of this nature are heightened by fast action moving towards the camera. A very low shot as the mass moves close up and over the camera adds to the effect.

If the opportunity presents itself, wide angles, follow shots and rear views of the troops moving are valuable. Here again is an opportunity to create an effect by the employment of panchromatic and filters. Desert sand and blue skies melt as one on ordinary film, but when filtered to secure a black sky, the effect leaves a lasting impression on your audience—particularly when the subject against the sky is white. The special DuPont Infra-D film is particularly valuable for creating such effects. Even in brilliant desert light, when an A filter is used with this film the lens opening must be f 2.5 for full exposure and an ink black sky.

Saharans are Mohammedans and consistently adhere to the teachings of their

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religion. Noon-day prayer by the troops provides subject matter of pictorial beauty and extreme interest. The treatment of these scenes mainly requires the application of the general rule of atmospheric background of pales and desert while the Saharans in earnest devotion provides the opportunity for close-ups. Shadows of palms on the ground add to the effect if your camera location is carefully chosen.

Don't forget that you can even make a close-up of a close-up and try to follow the general rule of always making a close-up immediately after you complete your general view.

As the end of your story draws to a close after a careful coverage of all the important and outstanding features of the daily life of the Saharans, there must be a fitting end to your film. Days of working with these carefree devoted soldiers of Italy leave you with nothing but admiration for their courage and faithfulness. Scenes that glorify your subject must be made to complete the story. The most beautiful pictorial scenes that you can find will serve this purpose. Heavy filtered scenes of the Saharans on patrol amid the desert wastes are the answer—with a sunset silhouette shot thrown in for good measure.

## PROFESSIONAL LOOKS AT 8 MM

(Continued from Page 35)

aid of a small dental mirror. Mount your camera firmly—say on a tripod—and check carefully the area taken in by the lens. Then place the door on the camera, hold the finder (in its mount) beside the door, and adjust it so that it includes the same area as shown by the lens. Fasten the finder-mount firmly to the door with a clamp, and mark the position of the mount. Take the finder from the mount, drill and tap two screw-holes through mount and door, and fasten the mount to the camera. The finder can be removed from the mount at any time, and when remounted, and held in place by the registering-screw, it will be absolutely accurate except at very close range, when the separation between finder and lens will throw the finder laterally off to a slight extent.

The chief fault in most of the pictures 8mm novices have shown me is the unsteadiness of the camera caused by the operator. Mechanically speaking, 8mm cameras are satisfactorily steady; but no camera in the world can make steady pictures if it is not held on a firm support. With too many 8mm users (and 16mm users, too), the interest seems to be in WHAT they are photographing, instead of HOW they are photographing it. The camera is either shaking, continually panning, or moving up and down. Panning is not objectionable if you have a moving person or object to be followed, but it should be done only when there is a logical reason for it. In following horses on a race track, for instance, the camera has to be moved rapidly, yet makes a pleasing picture, for the horses, which are the center of interest, draw the attention from the objectionable feature introduced by the rapid movement of the camera. But—make the same shot WITHOUT the horses! The camera is moving the same way, at the same speed, and covering the same area—but without the horses, which furnish a logical reason for the movement, the picture is bad, and strains the eyes of the audience. 8mm cameras are so light, and so

well-balanced that they can be held absolutely rigid, without a tripod or other rest, if the operator keeps his mind on how he is photographing. If they are not held steady, the small size of the frame, and the relatively huge magnification in projection, will magnify any unsteadiness.

If you want to make a moving shot, take a leaf from the professional's book: plan it out so you will know beforehand just where and when the camera will start to move, and where it will stop. Then pick out the spots in the scene where the people come to a standstill, so that you can make close-ups to be cut into these shots. The result will be a very smooth running picture. In all other shots, get back far enough to allow your subjects ample room for normal movement, so you won't have to swing the camera to keep them in the picture. And—don't forget to make plenty of close-ups.

### Still File For Amateur Movies

Often when talking to your friends about the beautiful little film you have just made, you are handicapped by having no projector handy to bear out your statements. Several of the more progressive cinematographers have adopted the still-life system, so that they can have illustrative stills available at any time.

It should be very easy to make a series of snapshots while you are shooting your picture, duplicating all the important scenes and climaxes. If you haven't the time to make them yourself, you can nearly always trust it to some member of your filming-group—in fact, it is really better to have somebody else act as still man, so that you can concentrate on the cine-camera work. Once the stills are made, it is easy to make a file or album of them, giving a very complete record of what the film is about, and how you treated it.

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# BACKYARD MOVIES

(Continued from Page 37)



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During George  
Have gone to Sue's for a few  
days to help move. Just know  
you won't mind. Be a good boy  
Jane

Scene 11 Close shot of hands, holding  
note. The note is thrown wildly into  
the air

Scene 12 Close shot of George's feet  
—they start to dance

TITLE "WHOOOPS! WHAT A BREAK!  
WHAT TO DO?"

Scene 13 Close-up of George's trouser  
pocket. His hand comes out with  
money. He counts it

Scene 14 Close-up of telephone  
George's hand dials a number. Fade out

Scene 15 Fade in. Close shot,  
George removes his trousers. As he steps  
out of them, he gives them a kick, so  
that they land in a heap

Scene 16 Close shot. George's hand  
turns on the water in the bath-tub. Fade  
out

Scene 17 Fade in. Close shot of ice-  
box door. George's hand opens it and  
brings out a bottle

Scene 18 Close-up of George's hands  
pouring a drink

Scene 19 Close-up of the glass, empty.  
Fade out

Scene 20 Fade in. Medium long-shot  
of bath-tub, with water running out on-  
to the floor

Scene 21 Close shot of George's  
hands mopping up the spilled bath-  
water. Fade out

Scene 22 Fade in. Close-up of clock.  
It says 9:00

Scene 23 Close-up of feet entering  
bath-tub

Scene 24 Close shot of George, pull-  
ing on neatly pressed trousers

Scene 25 Close-up of bureau-drawer  
George's hands open the drawer and re-  
move a clean shirt, socks, etc

Scene 26 Close-up of George's foot  
He pulls on a sock, revealing a large hole

Scene 27 Close-up of drawer, but  
showing more of the interior. George's  
hand hunts for another pair of socks—  
but there are none

Scene 28 Close-up, removing sock.  
He fingers the hole

Scene 29 Close-up of a darning-need-  
le. George is trying to thread it, very  
clumsily, and without success. Fade out

Scene 30 Fade in. Close-up of clock.  
It reads 10:00. Fade out slowly

Scene 31 Fade in slowly. Close-up of  
clock. It now says 11:00

Scene 32 Close-up of George's hands,  
still struggling with the needle and  
thread. At last he gets the needle  
threaded

Scene 33 Medium shot of George's  
lap, from over his shoulder. He lays the

sock on his lap, and starts to darn it.  
Fade out

Scene 34 Fade in. Close-up of clock.  
It reads 1:00

Scene 35 Same as Scene 33. George  
finishes darning his sock, and tries to  
pick it up. It is sewed to the trouser-  
leg!

Scene 36 Close-up of a pair of scissors.  
George's hand comes down and  
grabs them

Scene 37 Same as scenes 33 and 35.  
George's hand brings the scissors in, and  
cuts the sock loose. In doing so, he also  
cuts a large hole in the trouser-leg

Scene 38 Close shot in a corner of  
the room—the trousers come flying into  
the picture, landing in a crumpled heap  
on the floor

Scene 39 George's hand holds up the  
trousers he originally discarded. Pan  
down the pants, to show them badly  
wrinkled

Scene 40 Close-up of ironing-board.  
George places the trousers on the board,  
and smooths them out, preparatory to  
pressing them

Scene 41 George's hand sets an elec-  
tric iron on the trousers. Pan, following  
the hand while it plugs in the iron. Fade  
out

Scene 42 Fade in. Close shot of ice-  
box door. George opens it and mixes an-  
other drink. Fade out

Scene 43 Fade in. Close shot of iron.  
It is smoking merrily

Scene 44 Close shot of George's feet,  
standing beside ice-box. A half-empty  
glass drops to the floor, breaking, as the  
feet hurry out of the picture

Scene 45 Close-up of the iron, still  
smoking. George's hand comes in and  
jerks it off the trousers

Scene 46 Close-up of smoking hole  
in trousers

Scene 47 Medium shot of hand hold-  
ing up the trousers. Back-light this so  
that the hole will show plainly. The  
hand drops the trousers disgustedly

Scene 48 Close shot of ice-box.  
George's feet enter, slowly. The door  
opens. Fade out slowly

Scene 50 Fade in slowly. Close-up  
of alarm-clock on bedside stand, ringing.  
It points to 8:00. Dissolve to

Scene 51 Large pile of bottles. Dis-  
solve to

Scene 52 Long shot of George, asleep,  
lying on the floor by the bed. His head  
is pillowed on a pair of shoes, and he  
has an empty bottle in his hand. If  
you can, light this with daylight coming  
through a window, and falling on George.  
Fade out slowly

THE END  
MRS. K. G. STEPHENS

San Francisco, California

## Flying the "Rolleiflex"

(Continued from Page 36)

they slower, but they bring the ground, relatively speaking, so much closer to the lens that you have to increase your shutter-speed too much to avoid blurring from the apparently increased motion.

If you can fix a lens-hood or sunshade on your camera, and have it so firmly mounted that there is no danger of its being blown off by the slipstream, this will be a very great advantage. For the same reason, filters should—whenever possible—be fitted **INSIDE** the camera, behind the lens. Incidentally, this is always the safest place for filters.

For all-around use in aerial photography, with SuperSensitive film, I think that the 23-A filter is probably the best. It is a fine haze-cutter, and gives a very nice correction besides. It will darken the sky enough to make clouds stand out quite well, add contrast to the picture, yet does not increase the exposure too much. For some types of horizontal cloud-effect shots, or pictures of nearby planes, the "G" and "X-2" filters are also useful, while for the most spectacular cloud-effects, if you have a fast enough lens, some of the heavier red filters are excellent. However, the best policy is to pin your faith on one filter, and use it as standard equipment and I have found the 23-A to be the best all-around filter for this purpose.

Filter-factors should be allowed for exactly as though you were on the ground.

Once in a while, you will find yourself flying under a thin screen of high clouds, which diffuse the sunlight, which will naturally call for some increase in exposure. However, if you are using filters which—like some of the heavier red ones—pass any appreciable proportion of the infra-red light, and film in any degree sensitive to this, you will be surprised at the way these clouds pass the invisible infra-red while diffusing the visible light.

In most aerial photography, you will usually have to take the lighting chance offers. Whenever you can pick and choose, however, a cross-light is the best, as it gives more relief. On some cloud formations, a backlight is effective, but front-light is to be avoided, as it flattens everything out. Planes silhouetted against a large expanse of white clouds are very good subjects, while silver-colored metal planes, such as the Ford, Boeing and Douglas airplanes, are very striking if shown against a dark, heavily-filtered sky.

If you shoot planes in the air, nearby, remember that, although they seem to be moving slowly, they are actually traveling at better than a hundred miles per hour—so be sure that you shoot from an angle which will minimize the movement across your picture. Also, remember that you'll have to speed up your shutter to "stop" the movement. In a word, shoot such subjects exactly as you



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By William H. Estlin



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## The Birthday Party

(Continued from Page 32)

and then takes one of the parcels, which she hides behind her.

Scene 28 Long-shot of party. Daddy enters. All the children stop eating, and look up at him. Betty jumps up and kisses him. He gives her the parcel he carries.

Scene 29 Close-up of Daddy, smiling broadly. He speaks:

TITLE "Here's your present, Betty."

Scene 30 Close-shot of Betty, with the big parcel in her hands. She sits down, and starts to unwrap it.

Scene 31 Series of short flashes—close-ups (big heads) of the children, expectantly watching. (Shoot these from a variety of angles.)

Scene 32 Betty unwraps the parcel—and takes another out of it.

Scene 33 Close-up of Daddy, smiling. He works. Pan over to a close-up of Mother, smiling.

Scene 34 Close shot of wrappings, string, and boxes on the ground beside Betty. There is quite a pile, including a number of boxes, successively smaller.

Scene 35 Close shot of Betty—still unwrapping. The parcel is quite small now, and she is getting impatient and worried.

Scene 36 Medium-shot of Betty. The parcel is very small now, and she is about worn out.

Scene 37 Panoramic shot (close-up) of the children. They are disappointed too.

Scene 38 Medium-shot of Betty. She finally opens the last box—and finds in it a very tiny doll.

Scene 39 Close-up of Betty—about ready to cry because of her disappointment.

Scene 40 Long-shot of the children, laughing.

Scene 41 Medium long-shot of Betty. Mother approaches, and suddenly brings out the other big parcel, giving it to Betty.

TITLE Don't cry—here's Daddy's REAL present!"

Scene 42 Medium-shot. Betty starts to open the box.

Scene 43 Close-up of Daddy, smiling.

Scene 44 Medium long-shot of Betty, surrounded by the group of children. She takes a big, beautiful doll out of the box.

Scene 45 Close-up of Betty and the doll.

Scene 46 Medium-shot. Betty runs over and hugs Daddy.

Scene 47 Medium-shot of Betty, holding the doll. The children have joined hands and are dancing around her in a



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ring Mother and Daddy are in the background, beaming down at the children.

#### FADE OUT The End

If it is a little boy's birthday it might be more appropriate to make the opening different. An opening that would be a bit original would be to start with a close-up of a spoon in a bowl mixing dough. We assume this is the cake dough. Next you see this dough in the cake pans being inserted in the oven then you cut to a close-up of the finished cake and see the candles being placed in it.

If you have a camera that winds backward, this would be a fine chance for lap-dissolves.

Or if you wish you can also use it as a background and then superimpose your main title over it.

### Cinetricks Motion Control

(Continued from Page 35)

for one of two reasons. First, we wish to observe at a slower pace the action which a human, an animal, or a machine goes through its motions. This is sometimes necessary to make it possible for our slow-witted eyes to grasp the motion involved. Second, we wish to minimize the blurring caused by the photographing of a fast moving object with a slow shutter as well as to make more smoothly graceful the gyrations of a dancer by slightly slowing the screened action.

Quick motion, the photographing at slower than normal film speed of a given action, is used for comedy effects and to make pictures under light conditions which are too poor to allow of sufficient exposure at normal film speed.

In next month's article, we will take up trick work which involves the use of reversed travel of film through the camera, and the common methods by which the effects so obtained with professional equipment may be obtained simply with amateur equipment.

### "Amateur Talking Pictures And Recording"

By BERNARD BROWN, B.Sc. (Eng.)  
Penguin Publishing Co., N. Y. and London.

Here is a book to please the many amateur cinematographers who have yearned to experiment with talking pictures. Not only does it give a very sound review of the theory of sound-recording and the general principles used in professional film and disc sound-recording, but it supplies, too, some very practical information as to actual equipment and methods for amateur recording—synchronous and otherwise—by the disc method. He likewise makes some mention of the possibilities of amateur sound-on-film recording with both 16mm and 9.5mm film.

Being published in England, where the phonograph is taken much more seriously than here, the book is a remarkable directory of British-made apparatus for



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home-recording; some of the equipment described and illustrated seems excellent, and should interest many individuals who, while not particularly interested in making their own talkies, are none the less interested in the possibilities of making their own gramophone discs. There is also a description of a British 16mm sound-on-film system—the British Thompson-Huston Company's product, which is different from American apparatus in that it uses standard 16mm film (with the same perforation as for silent pictures) and a reduced picture-area.

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### 250 Leica Exposures

• The magazine "Camera" of Switzerland reports a new Leica attachment which permits the making of 250 exposures in a single loading. This was reported on exhibition at the Photographic Exposition in Berlin.



# HERE'S HOW

by A.S.C. Members

**PHOTOELECTRIC METERS AND COLOR.** How does the color-sensitivity of the photo-cell exposure-meter correspond with that of the film? Should I make any allowance for this in using such meters? —E.E.M., Hartford, Conn.

The color-sensitivity of most photo-electric or photo-cell exposure meters now available (including the Skanner, Weston, Electrophot, etc.) is very similar to that of the human eye. The maximum sensitivity is in the yellow region. Modern Panchromatic film, especially SuperPan, has a very similar sensitivity, differing slightly, of course, with each make of film; there is a slight variation between the film's color-sensitivity, and that of the eye, but this is not great enough to make an error greater than the latitude of film and processing can take care of.

Orthochromatic and Semi-chromatic films, on the other hand, have a marked preference for blue, which must be allowed for early in the morning and late in the afternoon, when the light becomes strongly yellowish. In the middle of the day, the reading of the meter will be quite satisfactorily accurate if due allowance is made for the slower overall speed of these emulsions, as indicated by the directions for using the meter. Early in the morning and late in the afternoon, however, it is wise to compensate for the yellowness of the light by opening the lens one full stop more than the meter-reading.

—Clyde de Vinna, A.S.C.

**REFLECTORS.** I am a member of a newly organized Movie Club, just getting ready to start its first production. We are using a Bell & Howell camera, and I'd like to get a few pointers on exterior work. How are reflectors used for general scenes of from two to five subjects? What are the best positions in back-lighting a subject? How many reflectors are necessary for general scenes? —J.R.P., San Diego, Cal.

Your questions are answered more thoroughly than is possible in the limited space here available, in an article in last month's issue of THE AMERICAN CINEMATOGRAHER, "The A-B-C of Outdoor Lighting," by Arthur Campbell. This

article will give you a clear understanding of the basic principles of controlled exterior lighting—especially the use of reflectors—and we urge that you study it and the diagrams which illustrate it. Though these diagrams are of extremely simple set-ups, with but one subject shown, the principle may be expanded to meet any need.

For general use, the best lighting is a "cross-lighting," with the direct light striking your subjects from the side, and the reflected light from the reflectors lightening (but not completely eliminating) the shadows on the opposite side. This lighting can be further improved by placing other reflectors somewhat behind the subjects, throwing their light on the subjects' backs, giving a supplementary back-light. This, as Mr. Campbell points out, is very nearly an ideal lighting for average exterior scenes. Such a set-up is shown in Fig. 2 of Mr. Campbell's article.

In a true back-lighting, the sunlight should strike the subject from behind, and reflectors should be placed in front, just outside the camera-lens, to illuminate the front of the subject. One of these reflectors should be closer to the subject than the other, to avoid flatness. In making back-lit shots, the camera should be equipped with a good, deep lens-hood or sunshade, and care should be taken to see that the direct rays of the sun do not strike the glass elements of the lens (or the glass of any filters you may be using), as this would cause "flares," or reflections on the film from these surfaces. A sunshade is always a great benefit in any sort of camerawork, no professional will work without one.

The number of reflectors needed must depend on a number of things: how many people you are using, how they are grouped, how large a field you are photographing, and sometimes the size of the reflectors. As a rule, when you are photographing only one or two people, you can get by with but two or three reflectors for simple set-ups; when you are photographing more people, you will need more reflectors, in order to light each individual properly. As a general rule, count on at least two reflectors per person, and more than this if any of the players will have to move around in the scene, for in such a case you will have to fix reflectors to light them properly in each position they will occupy. In your own case, if you have a scene in which two or three principal players appear, with a greater number of supporting or extra people (as is so often the

case in club productions), it is wiser to concentrate only on the principals, with perhaps a couple of reflectors to lighten the shadow-sides of the extras. In this way, your principals, being better lit, will stand out from the crowd—and save you time and trouble in lining up your shot. —Dwight W. Warren, A.S.C.

**REVERSING YOUR OWN** Is it possible to purchase a film that is fast enough to take pictures on the outside, and then develop this film and reverse it into a positive for projection? If so, can you tell me where I can find the necessary information for doing this, the formulas, equipment, etc? —C.P.R., Harvey, Illinois.

Of course, all of the reversal film available commercially—Eastman, Agfa, Pilex, etc.—is of this type and the charge for the processing (which is done by experts) is included in the cost of the film. We do not recommend that the amateur try to do his own reversing, for while it is quite easy, he cannot give his film the same degree of individual control possible in a professional laboratory, and he will not, as a rule, get the most out of his shots. The "Cinematographic Annual" gives instructions for reversing, both using "flashing" (light) for reversal, and chemically reversing the image. The former requires the use of a solid opaque drum, the latter may be done with any type of equipment, including the Sinnerman reels. Any type of film may be used: one may process one's own reversal stock, or use either negative or positive film for the purpose. DuPont, Ciba, Selo, and other firms supply positive film (16mm) at very low prices, averaging \$1 per hundred feet. This may be used for exterior shots, and reversed by the individual with surprisingly satisfactory results. —Fred Gage, A.S.C.

**BOOKS ON ANIMATED CARTOONS.** I have been unable to obtain any information on animated cartoons and motion pictures similarly produced. If you have available a hand-book, or other similar data, that you may desire to place in the hands of individuals, information to that effect would be appreciated. —J.H., San Rafael, Cal.

There have been no such hand-books on animated cartoons published recently. However, several magazine articles, monographs, etc., have appeared. "Sound



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#### 8mm FILM IN 16mm CAMERAS.

I frequently have occasion to do extremely large-screen projection from 16mm. I have heard that 8mm film has the finest grain of any film on the market. Could I use it for making my 16mm films which are to be projected to extreme sizes?

—R.M.P., Chicago

You are quite right in saying that 8mm film has the finest grain of any sub-standard emulsion now marketed. Theoretically, it would be ideal for your work. You overlook, however, the facts that the 8mm film, while of 16mm width, is specially perforated for the 8mm camera, and also the fact that, as the last stage in the mechanically operated reversal processing machines, the film is automatically split lengthwise to give the two 8mm-wide strips which are joined together for projection. Therefore, it would hardly be possible to use 8mm film for your purpose; it would be almost impossible to have it processed without being split, and if this was done, the double perforation would give you continued projection-trouble in framing.

—Edward J. Snyder, A.S.C.

**LENSES.** "Which do you recommend as the best lens for all-around home-movie filming: the Universal-focus, F-3.5 or the faster, focusing types—V.H.C., Dallas, Tex.

This must depend entirely upon the type of work you want to do. For people who make many interiors, or work frequently in a poor light, the faster lenses have undoubted advantages. For those who photograph subjects where extremely critical focus is necessary, or who have occasion to project their pictures on a large screen, the focusing-mount lenses are also valuable. But—especially after viewing thousands of feet of amateur film sent us for review—we must strongly recommend that everyone's

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equipment include a Lin-vensal-focus lens even if it is to be used as an auxiliary to a faster, focusing objective. Stepped down to f11 or smaller (as is always the case on normal extension) a 25mm fixed focus lens as used in 16mm cameras will assure that everything from six feet on to infinity will be in virtually perfect focus, and the 12.5mm lenses used for 8mm pictures will, under the same conditions, keep everything from two feet forward sharp. Moreover, in designing any fast lens some concessions must be made to obtain the added speed; accordingly, a slower lens—such as most Universal-focus lenses are—will generally give slightly better optical quality, though in the best designs, the difference is hardly perceptible except to the trained eye.

—Joseph Walker, A.S.C.

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## 16mm Colored Sound Movies Experiments Shown

• Laboratory experiments which demonstrate the practicability of making and printing 16mm sound-on-film movies pictures in natural colors were described before the Society of Motion Picture Engineers convening in Atlantic City, by research engineers of the RCA Victor Company of Camden.

It is believed that these experiments will open up a new and potentially broader field of usefulness for the converse 16mm size sound-on-film industrial and educational motion pictures which have hitherto been restricted to black and white sound photography. With the new color methods, products which depend on rich coloring and design for their principal sales appeal will have new avenues

of merchandising and selling opened up for them. Color photography added to sound should also prove valuable in enhancing the "eye value" of other types of products and services. Its application to visual education will mark an important step forward in that field.

The sound recording experiments with color photography were conducted by the RCA Victor Company engineers with the Kodacolor film and color filter process. Actual recording tests showed that no distortion of a serious nature resulted from the peculiar base of the film which is specially embossed (longitudinally lenticulated) for color sensitivity. Further experiments by the Camden engineers established that color subjects made by the subtractive color process on standard 35mm film could be optically reduced to 16mm size and successfully printed on Kodacolor film stock.

## Amateur Talkie Camera Here Soon

• The development of simplified apparatus which promises to make it possible for anyone to make personal sound motion pictures in the near future was described in a joint paper delivered before the Society of Motion Picture Engineers, by research engineers of the RCA Victor Company of Camden.

It was disclosed that since the advent of sound revolutionized the motion picture art, the Camden engineers have been working on the problem of developing a practicable amateur sound camera, which would be compact in size, and simple and economical to operate. According to the paper presented these efforts are expected to bear practicable fruit in the near future.

The sound camera was described as a "newness" type incorporating the sound recording system in the single lightweight camera case. As the subject is photographed the operator talks into a mouthpiece leading to a vibrating metal diaphragm. This diaphragm which is set in motion by the speaking voice, is coupled mechanically to a tiny mirror which vibrates in unison with it. A light beam directed on the mirror is reflected with its fluctuations on the unwarped edge of the film as it passes through the camera. For recording the voice of the person or group being photographed, as well as for atmospheric sound effects, a separate microphone attachment together with electrical amplifying and recording equipment are provided for convenient mounting on a specially designed "unmount" tripod upon which the sound camera itself may also be set.

The paper emphasized that while experimental models of amateur sound cameras have been brought to an advanced stage of development in the laboratory, the final models would not be ready for public use for several months yet.

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*for our*

# AMATEUR MOVIE CONTEST

## EQUIPMENT PRIZES

Here are a few of the equipment prizes that will be given in this competition:

Eastman Kodak Co. gives a 16mm Kodascope Model K-75 Projector.

Value ————— \$235.00

Bell & Howell . . . To the highest winner using a Bell & Howell Camera . . . Merchandise to the value of \$125.00 will be given. . . . To the second best picture using Bell & Howell camera, merchandise to the value of \$75.00.

Victor Animatograph Corp. gives a Model 5 16mm Camera with F2.9 Focusing Mount Dallmeier lens.

List Price ————— \$175.00

Craig Movie Supply Co. of Los Angeles will give a Senior Rewind and Splicer.

Value ————— \$19.50

Harrison & Harrison will give one of their universal Filter Holders and a set of 1 1/4-inch Multi-Filters consisting of yellow, red and green filters. Value \$14.00.

**WATCH THIS PAGE FOR  
ADDITIONAL PRIZES**

This \$1,000 will be divided very simply. There will be a grand prize of \$250.00 for the best all around picture. There will be from 10 to 15 prizes in the various classifications of \$50.00 each. Even though you may not win the first prize you would have a chance at the \$50.00 given for the best picture presented in the following classifications, Scenic, Travel Educational, Scenario, Home Movies, Kodacolor, Technical and any other classifications which might be brought forth by the entries made.

If you intend to enter this contest please send coupon on this page so that we might send you official entry blank.

Please send me one of your official entry blanks. I intend to enter a 16mm. Sound 9 1/2mm picture in your 1934 contest. I understand my entry must be in your office not later than October 31, 1934.

Name \_\_\_\_\_

Street \_\_\_\_\_

Address \_\_\_\_\_

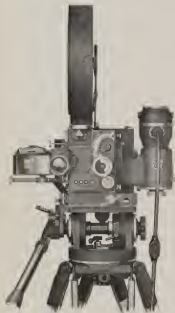
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